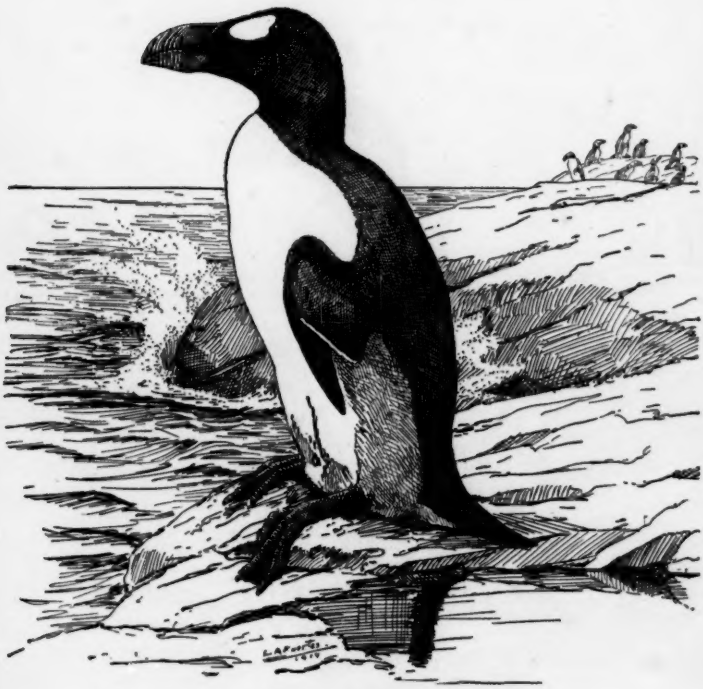
OLD SERIES VOL. XLVII. | CONTINUATION OF THE BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB | NEW SERIES, VOL. XXXIX.

The Auk

A Quarterly Journal of Ornithology

EDITOR
WITMER STONE



VOLUME XXXIX

PUBLISHED BY

The American Ornithologists' Union

LANCASTER, PA.
1922

Entered as second-class mail matter in the Post Office at Lancaster, Pa.

Wahr
2-27-1923

FEB 17 1922

Old Series, Vol. XLVII

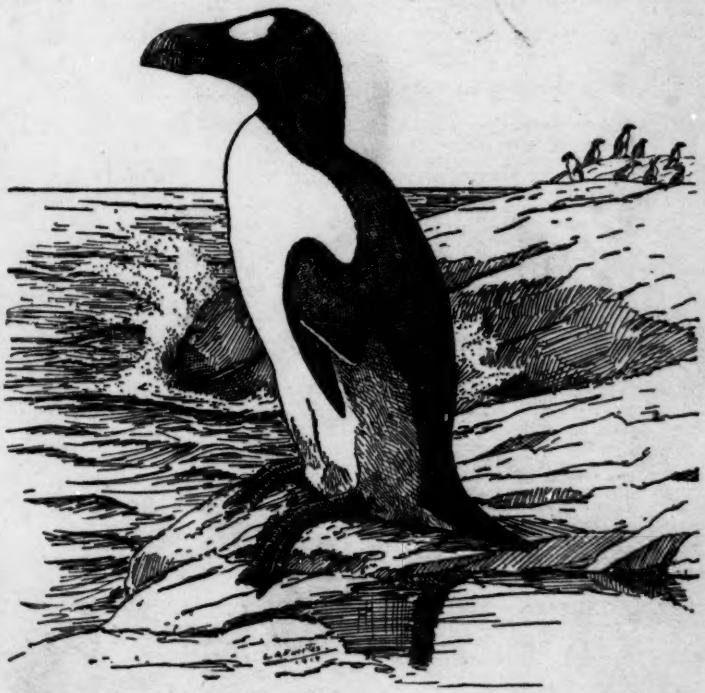
CONTINUATION OF THE BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

New Series, Vol. XXXIX

The Auk

A Quarterly Journal of Ornithology

Vol. XXXIX JANUARY, 1922 No. 1



PUBLISHED BY

The American Ornithologists' Union

LANCASTER, PA.

ISSUED FEBRUARY, 1922

Entered as second-class mail matter in the Post Office at Lancaster, Pa

CONTENTS

In Memoriam: Joel Asaph Allen. *By Frank M. Chapman* (Plate I).. 1

An Adventure with a Pair of Harlequin Ducks in the Yosemite Valley. *By Charles W. Michael and Enid Michael* (Plates II–III) 14

A Myrtle Warbler Invasion. *By Charles L. Whittle*..... 23

Problems of Field Identification. *By Ludlow Griscom*..... 31

A Calendar of Bird Migration. *By Norman Criddle*..... 41

Sexual Selection and Bird Song. *By Chauncey J. Hawkins*..... 49

Notes on Tubinares, Including Records Which Affect the A. O. U. Check-List. *By Robert Cushman Murphy*..... 58

Supplementary Notes on the Birds of Berkshire County, Massachusetts. *By Walter Faxon and Ralph Hoffmann*..... 65

Notes on North American Birds XI. *By Harry C. Oberholser*..... 72

Bird Distribution in Eastern Kentucky. *By R. E. Horsey*..... 79

A New Burrowing Owl from Colombia. *By Witmer Stone*..... 84

Thirty-ninth Stated Meeting of the American Ornithologists' Union. *By T. S. Palmer*..... 85

Report of the Secretary. *By T. S. Palmer*..... 95

General Notes.—The Kittiwake in Florida, 99; Shoveller in Bergen Co., New Jersey, in Spring, 100; Mute Swans on the Hudson, 100; Black Tern on Long Island in Spring, 101; Some Tern Notes, 101; The Pintado Petrel (*Daption capense*) in Maine, 101; Cory's Shearwater off Newfoundland with Remarks on Its Identification in Life, 103; The Old Squaw (*Harelda hyemalis*) at San Diego, Calif., 104; King Eider (*Somateria spectabilis*) in Southern Michigan, 104; Shelduck (*Tadorna cascarca*) in Massachusetts, 104; White Pelican (*Pelecanus erythrorhynchos*) Nesting in Minnesota, 105; American Egret (*Casmerodius egretta*) in Maine, 105; Two Records of the Stilt Sandpiper, 106; The Sharp-tailed Sandpiper in Southern California, 106; The Purple Sandpiper (*Arquatella maritima maritima*) at Ithaca, N. Y., 106; The Mourning Dove in Newfoundland, 106; What is *Buteo rufescentior* Salvin and Godman, 107; Snowy Owl (*Nyctea nyctea*) in Minnesota in Midsummer, 107; Notes on the Food of the Guacharo (*Steatornis caripensis*), 108; Scissor-tailed Flycatcher (*Muscivora forficata*) in Northampton County, Virginia, 109; Vermilion Flycatcher (*Pyrocephalus rubinus mexicanus*) in Eastern Texas, 110; The Evening Grosbeak at Mt. Holly, N. J., 110; The Evening Grosbeak at Haverford, Pa., 110; Evening Grosbeak at Scranton, Pa., 110; The Cliff Swallow (*Petrochelidon l. lunifrons*) in Indiana, 111; Nesting of the Louisiana Water-Thrush in Massachusetts, 111; The Short-billed Marsh Wren in the Montreal District, 112; The Short-billed Marsh Wren in Amherst, Massachusetts, 115; The Determination of the Type of the Genus Cistothorus Cabanis, 115; Mockingbird in Maine, 115; The Hermit Thrush (*Hylocichla guttata pallasi*) as a Summer Resident in New Jersey, 116; Notes from Lynne, Connecticut, 117; Some Interesting Dates of Occurrence near New York City, 117; Winter Notes from Montauk Point, Long Island, 117; Notes on Crossing the Mexican Gulf from Key West to Galveston, 119; Further Additions to the Summer Avifauna of Lake County, 120; On *Accipiter chionogaster venezuelensis*, 122.

Recent Literature.—Bent's 'Life Histories of North American Gulls and Terns,' 122; Chapman on New South American Birds, 123; Mathews' 'The Birds of Australia,' 123; Van Oort's 'Birds of the Netherlands,' 124; Howell's 'Biological Survey of Alabama,' 124; Holt on the Avery Bird Collection, 125; Chapin on Congo Birds, 125; Phillips on Species Crosses in Birds, 126; Mailliard on the Birds and Mammals of Siskiyou County, California, 126; Aves in the Zoological Record, 126; Grinnell's 'The Principle of Rapid Peering in Birds,' 127; Murphy on the Seacoast and Islands of Peru, 128; Kirke Swann's 'Synopsis of the Accipitres,' 128; Bannerman on First Impressions of Tunisia and Algeria, 129; Grote on the Birds of Ukerewe Island, 129; Griscom on 'The Winter Avifauna of the Camargue,' 129; Bannerman on Birds from the Belgian Congo, 130; Rothschild on Birds from Dutch New Guinea, 130; Recent Papers on Bird Conservation, 130; The Ornithological Magazines, 131; Ornithological Articles in Other Journals, 139.

Correspondence.—Popular Bird Names, 144; Species and Subspecies, 145.

Notes and News.—Obituary, Dr. Theobald Johannes Kruper, 148; Fellows of the A. O. U., 149; Expedition to the West Indes, 149; Expedition to Nicaragua, 149; The Delaware Valley Ornithological Club, 149; The Wilson Ornithological Club, 150; The New England Bird Banding Association, 150.

OFFICERS OF THE AMERICAN ORNITHOLOGISTS' UNION PAST AND PRESENT.

PRESIDENTS.

*J. A. Allen, 1883–1890.
*D. G. Elliot, 1890–1892.
*Elliott Coues, 1892–1895.
*William Brewster, 1895–1898.
Robert Ridgway, 1898–1900.
C. Hart Merriam, 1900–1903.
*Chas. B. Cory, 1903–1905.
Chas. F. Batchelder, 1905–1908.
E. W. Nelson, 1908–1911.
Frank M. Chapman, 1911–1914.
A. K. Fisher, 1914–1917.
John H. Sage, 1917–1920.
Witmer Stone, 1920–

VICE-PRESIDENTS.

*Elliott Coues, 1883–1890.
Robert Ridgway, 1883–1891; 1895–1898.
*William Brewster, 1890–1895.
H. W. Henshaw, 1891–1894; 1911–1918.
C. Hart Merriam, 1894–1900.
*Chas. B. Cory, 1898–1903.
Chas. F. Batchelder, 1900–1905.
E. W. Nelson, 1903–1905.
Frank M. Chapman, 1905–1911.
A. K. Fisher, 1908–1914.
Witmer Stone, 1914–1920.
George Bird Grinnell, 1918–
Jonathan Dwight, 1920–

SECRETARIES.

C. Hart Merriam, 1883–1889.
John H. Sage, 1889–1917.
T. S. Palmer, 1917–

TREASURERS.

C. Hart Merriam, 1883–1885.
*Chas. B. Cory, 1885–1887.
*William Dutcher, 1887–1903.
Jonathan Dwight, 1903–1920.
W. L. McAtee, 1920–

* Deceased.

418641

MEMBERS OF THE COUNCIL.

*J. A. Allen, 1883–1921.
*S. F. Baird, 1883–1887.
*William Brewster, 1883–1919.
Montague Chamberlain, 1883–1888.
*Elliott Coues, 1883–1899.
H. W. Henshaw, 1883–1894; 1911–1918.
*George N. Lawrence, 1883–1890.
C. Hart Merriam, 1883–
Robert Ridgway, 1883–
*Chas. B. Cory, 1885–1895; 1896–1921.
*William Dutcher, 1887–1920.
*D. G. Elliot, 1887–1915.
Leonhard Stejneger, 1887–1895; 1896–1899.
*Thomas McIlwraith, 1888–1889.
John H. Sage, 1889–
*N. S. Goss, 1890–1891.
Chas F. Batchelder, 1891–
Frank M. Chapman, 1894–
*Charles E. Bendire, 1895–1897
A. K. Fisher, 1895–
Jonathan Dwight, 1896–
Ruthven Deane, 1897–
Witmer Stone, 1898–
Thomas S. Roberts, 1899–
E. W. Nelson, 1900–
C. W. Richmond, 1903–
F. A. Lucas, 1905–1921
W. H. Osgood, 1911–1918, 1920–
Joseph Grinnell, 1914–
T. S. Palmer, 1917–
Harry C. Oberholser, 1918–
Geo. Bird Grinnell, 1918–
Arthur C. Bent, 1921–

Officers are ex-officio members of the Council during their terms of office and ex-presidents are members for life. Ex-officio members are included in the above.

* Deceased.

Elections have been in November except in 1883 and 1884 (September) 1887 (October), 1907 and 1909 (December), 1914 (April) and 1915 (May)

CONTENTS OF VOLUME XXXIX.

NUMBER I.

	PAGE
IN MEMORIAM: JOEL ASAPH ALLEN *By Frank M. Chapman* (Plate I)	1
AN ADVENTURE WITH A PAIR OF HARLEQUIN DUCKS IN THE YOSEMITE VALLEY. *By Charles W. Michael and Enid Michael* (Plates II–III)	14
A MYRTLE WARBLER INVASION. *By Charles L Whittle*	23
PROBLEMS OF FIELD IDENTIFICATION. *By Ludlow Griscom*	31
A CALENDAR OF BIRD MIGRATION. *By Norman Criddle*	41
SEXUAL SELECTION AND BIRD SONG. *By Chauncey J. Hawkins*	49
NOTES ON TUBINARES, INCLUDING RECORDS WHICH AFFECT THE A. O. U. CHECK-LIST. *By Robert Cushman Murphy*	58
SUPPLEMENTARY NOTES ON THE BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS. *By Walter Faxon and Ralph Hoffmann*	65
NOTES ON NORTH AMERICAN BIRDS XI. *By Harry C. Oberholser*	72
BIRD DISTRIBUTION IN EASTERN KENTUCKY. *By R. E. Horsey*	79
A NEW BURROWING OWL FROM COLOMBIA. *By Witmer Stone*	84
THIRTY-NINTH STATED MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION. *By T. S. Palmer*	85
REPORT OF THE SECRETARY. *By T. S. Palmer*	95

GENERAL NOTES

The Kittiwake in Florida, 99; Shoveller in Bergen Co., New Jersey, in Spring, 100; Mute Swans on the Hudson, 100; Black Tern on Long Island in Spring, 101; Some Tern Notes, 101; The Pintado Petrel (*Daption capense*) in Maine, 101; Cory's Shearwater off Newfoundland with Remarks on Its Identification in Life, 103; The Old Squaw (*Harelda hyemalis*) at San Diego, Calif., 104; King Eider (*Somateria spectabilis*) in Southern Michigan, 104; Shelduck (*Tadorna cascarca*) in Massachusetts, 104; White Pelican (*Pelecanus erythrorhynchos*) Nesting in Minnesota, 105; American Egret (*Casmerodius egretta*) in Maine, 105; Two Records of the Stilt Sandpiper, 106; The Sharp-tailed Sandpiper in Southern California, 106; The Purple Sandpiper (*Arquatella maritima maritima*)at Ithaca, N. Y., 106; The Mourning Dove in Newfoundland, 106; What is *Buteo rufescentior* Salvin and Godman, 107; Snowy Owl (*Nyctea nyctea*) in Minnesota in Midsummer, 107; Notes on the Food of the Guacharo (*Steatornis caripensis*), 108; Scissor-tailed Flycatcher (*Muscivora forficata*) in Northampton County, Virginia, 109; Vermilion Flycatcher (*Pyrocephalus rubinus mexicanus*) in Eastern Texas, 110; The Evening Grosbeak at Mt Holly, N. J., 110; The Evening Grosbeak at Haverford, Pa., 110; Evening Grosbeak at Scranton, Pa., 110; The Cliff Swallow (*Petrochelidon l. lunifrons*) in Indiana, 111; Nesting of the Louisiana Water-Thrush in Massachusetts, 111; The Short-billed Marsh Wren in the Montreal District, 112; The Short-billed Marsh Wren in Amherst, Massachusetts, 115; The Determination of the Type of the Genus

Cistothorus Cabanis, 115; Mockingbird in Maine, 115; The Hermit Thrush (*Hylocichla guttata pallasi*) as s Summer Resident in New Jersey, 116; Notes from Lynne, Connecticut, 117; Some Interesting Dates of Occurrence near New York City, 117; Winter Notes from Montauk Point, Long Island, 117; Notes on Crossing the Mexican Gulf from Key West to Galveston, 119; Further Additions to the Summer Avifauna of Lake County, 120; On *Accipiter chionogaster venezuelensis*, 122.

RECENT LITERATURE

Bent's 'Life Histories of North American Gulls and Terns,' 122; Chapman on New South American Birds, 123; Mathews' 'The Birds of Australia,' 123; Van Oort's 'Birds of the Netherlands,' 124; Howell's 'Biological Survey of Alabama,' 124; Holt on the Avery Bird Collection, 125; Chapin on Congo Birds, 125; Phillips on Species Crosses in Birds, 126; Mailliard on the Birds and Mammals of Siskiyou County, California, 126; Aves in the Zoological Record, 126; Grinnell's 'The Principle of Rapid Peering in Birds,' 127; Murphy on the Seacoast and Islands of Peru, 128; Kirke Swann's 'Synopsis of the Accipitres,' 128; Bannerman on First Impressions of Tunisia and Algeria, 129; Grote on the Birds of Ukerewe Island, 129; Griscom on 'The Winter Avifauna of the Camargue,' 129; Bannerman on Birds from the Belgian Congo, 130; Rothschild on Birds from Dutch New Guinea, 130; Recent Papers on Bird Conservation, 130; The Ornithological Magazines, 131; Ornithological Articles in Other Journals, 139

CORRESPONDENCE

Popular Bird Names, 144; Species and Subspecies, 145

NOTES AND NEWS

Obituary, Dr. Theobald Johannes Kruper, 148; Fellows of the A. O. U., 149; Expedition to the West Indies, 149; Expedition to Nicaragua, 149; The Delaware Valley Ornithological Club, 149; The Wilson Ornithological Club, 150; The New England Bird Banding Association, 150.

NUMBER II.

PAGE

IN MEMORIAM: CHARLES BARNEY CORY. By *Wilfred H. Osgood* (Plate IV) 151

BREEDING HABITS OF THE BARNACLE GOOSE. By *F. R. C. Jourdain* (Plate V) 166

FLIGHT SONGS AND MATING SONGS. By *Aretas A. Saunders*. . . . 172

BIRDS OF FROST VALLEY, SLIDE MOUNTAIN REGION, SOUTHERN CATSKILLS. By *Mary Wood Daley*. 176

A COMPARISON OF THE FOOD HABITS OF BRITISH AND AMERICAN STARLINGS. By *E. R. Kalmbach* 189

THE FUNCTION OF THE OESOPHAGUS IN THE BITTERN'S BOOMING. By *James P. Chapin* (Plate VI). 196

RODERICK ROSS MACFARLANE, 1833–1920. By *Edward A. Preble* (Plate VII) 203

ADVENTURES IN BIRD-BANDING IN 1921. By *S. Prentiss Baldwin* (Plates VIII and IX) 210

SOME BIRD NOTES FROM INDIAN BAY, MAN. By *William Rowan* . 224

BIRDS OF BOWLING GREEN, KENTUCKY. By *Gordon Wilson*. . . . 233

SEVENTH ANNUAL LIST OF PROPOSED CHANGES IN THE A. O. U. CHECK-LIST OF NORTH AMERICAN BIRDS. By *Harry C. Oberholser* 243

GENERAL NOTES

Dovekie (*Alle alle*) at Newport, Me., 249; Iceland Gull at Elizabeth, N. J., 249; An Inland Record for the Man-o'war-bird, 249; Surf Scoters (*Oidemia perspicillata*) near St. Louis, Mo., 250; European Widgeon (*Mareca penelope*) at Corpus Christi, Texas, 250; Old Squaw (*Clangula hyemalis*) in Texas, 250; An Enormous Flock of Canvasbacks (*Aythya valisineria*) Visit the Detroit River, 250; The Greater Snow Goose in Massachusetts, 251; Notable Increase of Egrets in Chatham County, Georgia, 251; Nesting of the Bittern (*Botaurus lentiginosus*) in Philadelphia Co., Pa., 252; A Connecticut Record of the Stilt Sandpiper, 252; The European Gray Partridge in Saskatchewan, 253; Early Nesting of the Mourning Dove, 254; On the Nesting of *Ectopistes migratorius*, 254; Notes on *Ectopistes migratorius*, 255; Economic Status of *Coragyps urubu* in British Guiana, 255; Snowy Owl at Elizabeth, N. J., 257; Nesting of the Long-eared Owl in Southern New Jersey, 257; Hawk Migration Route at Whitefish Point, Upper Peninsula of Michigan, 257; Golden Eagle (*Aquila chrysaetos*) and Porcupine, 258; The Whistled Call of the Hairy Woodpecker, 259; Two Interesting Occurrences of the Alder Flycatcher in Erie County, N. Y., 260; An Albino Kingbird at Prouts Neck, Maine, 261; The White-necked Raven (*Corvus cryptoleucus*) in Boulder County, Colorado, 261; Magpies at Emmetsburg, Iowa, 261; Starlings Nesting at Syracuse, N. Y., 261; Evening Grosbeak at Stroudsburg, Pa., 262; Evening Grosbeaks in Pike Co., Pa., 263; White-throated Sparrow Summering in Autauga County, Alabama, 263; Tree Sparrow (*Spizella monticola monticola*) in Georgia, 263; The Nesting of Henslow's Sparrow in Southern Connecticut, 264; Albinism in the Sharp-tailed Sparrow (*Passerherbulus caudacutus*), 265; An Albino Swamp Sparrow (*Melospiza georgiana*), 265; Note on the Philadelphia Vireo (*Vireosylva philadelphica*), 265; Golden-winged Warbler nesting at Waterford, N. Y., 266; Hooded Warbler near Elizabeth, N. J., 266; A Deceived Yellow Warbler, 266; Prairie Warbler (*Dendroica discolor*) in January in South Carolina, 267; The Mockingbird at Prouts Neck, Maine, 267; An Unusual Mockingbird Record, 267; A Question Concerning the Distribution of the Long-billed Marsh Wren, 267; Parkman's Wren near Chicago, 268; The Willow Thrush (*Hylocichla fuscescens salicicola*) on the Coast of South Carolina, 268; Notes from Lawrence, Kans., 268; Notes on the Birds of the Beaver River Valley in Saskatchewan, 269; Bird Changes Caused by the Winter of 1917–1918, 270; Arkansas Kingbird and Egrets in Connecticut, 270; Notes on Early Summer Birds of the Virginia Coast, 271; Some Records from the Madison, Wisconsin, Region for the Spring of 1921, 273; Notes on Connecticut Birds, 275; Spring 1917 Migration of Shore Birds at Branchport, N. Y., 275; Rare and Uncommon Birds at Branchport,

N. Y., 276; A Strange Migration, 277; Bird Banding as an Opportunity to Study Character and Disposition, 278; Erratum, 278.

RECENT LITERATURE.

Chubb's 'Birds of British Guiana,' 279; Bannerman on the Canary Islands, 279; Abel Chapman's 'Savage Soudan,' 280; McAtee's Spring Bird Lists, 282; Kopman on the Wild Life Resources of Louisiana, 282; Todd on the Genus Pipromorpha, 283; Recent Papers by Chrostowski, 283; Oberholser on Bird Life in the Great Basin, 284; McAtees' Community Bird Refuges, 284; Wetmore on Body Temperature of Birds, 285; Bangs on Birds of the American Museum's Asiatic Expedition of 1916–1917, 286; Miller and Griscom on Central American Birds, 287; Grinnell and Storer on Yosemite Birds, 287; Cherrie and Reichenberger on New Birds from Southern South America, 288; Murphy and Harper on the Diving Petrels, 288; The Ornithological Journals, 289; Ornithological Articles in Other Journals, 294; Additional Publications Received, 297.

CORRESPONDENCE.

Bird Counts, 298; Inner Primaries of Woodpecker, 299.

NOTES AND NEWS.

Obituary: Thomas H. Jackson, 299; Flight of Passenger Pigeons, 300; Imported Birds, 301; Collecting Permits, 301; Gift to Audubon Societies, 301; N. E. Bird Banding Asso., 302; Complete Sets of 'The Auk,' 302; Personal Mention, 303; Motion Pictures of African Birds, 304.

NUMBER III.

PAGE

IN MEMORIAM: WILLIAM PALMER. By *Charles W. Richmond* (Plate X) 305

TRAPPING DUCKS FOR BANDING PURPOSES. By *Frederick C. Lincoln* (Plates XI to XIV) 322

BIRD BANDING AT THOMASVILLE, GEORGIA, IN 1922. By *L. R. Talbot* (Plates XV to XVII) 334

BIRD NOTES FROM NORTH GREENLAND. By *Langdon Gibson* . . 350

ON SOME NEW AND RARE BIRDS FROM COREA. By *Nagamichi Kuroda* and *Tazemo Mori*. 364

RECENT NOTES FROM AN OLD COLLECTING GROUND IN NORTHEASTERN ILLINOIS. By *Colin Campbell Sanborn* 367

THE ROLE OF THE "ACCIDENTAL." By *Joseph Grinnell* 373

NOTES ON FOOD HABITS OF THE SHOVELLER OR SPOONBILL DUCK (SPATULA CLYPEATA). By *W. L. McAtee* 380

THE SONG OF THE FIELD SPARROW. By *Aretas A. Saunders* . . . 386

THE BREEDING HABITS OF THE NORTHERN RAVEN IN PENNSYLVANIA. By *Richard C. Harlow*. 399

GENERAL NOTES.

The Iceland Gull (*Larus leucopterus*) in California, 411; Pelicans in the Interior of Alabama, 411; Eider Duck—A Correction, 411; *Anas diazi novimexicana* and *Grus americana* in Nebraska, 412; Whooping Cranes (*Grus americana*) in Texas, 412; *Florida caerulea* in Saratoga County, N. Y., 413; Greater Yellow-legs Records at Elizabeth, N. J., 413; A Remarkable Specimen of the Piping Plover (*Charadrius melodus*), 414; Summer Shore Birds, 414; Passenger Pigeons Not in Company Front, 416; An Unusual Flight of Black Vultures in Nelson County, Kentucky, 416; The Food of Long-eared Owls, 417; The Yellow-billed Cuckoo in Europe, 417; A Large Gathering of Kingbirds, 417; Arkansas Kingbird in Massachusetts, 417; Arkansas Kingbird in Plymouth County, Mass., 418; Wintering of the Canada Jay in Massachusetts, 418; The Lapland Longspur in Colorado, 419; Bachman s Sparrow (*Peucaea aestivalis bachmani*) in N. E. Illinois, 420; The Carolina Junco (*Junco hyemalis carolinensis*)on the Coast of South Carolina, 420; *Junco oreganus montanus* in Oregon, 421; Evening Grosbeak at Ellenville, N. Y., 421; Evening Grosbeak at Winsted, Conn., 421; Rare Winter Birds at New Hampton, Iowa, 422; Bohemian Waxwings at Topeka, Kas., 422; *Wilsonia pusilla chryseola* in New Mexico, 423; *Wilsonia pusilla pusilla* in Colorado, 423; Nesting Sites of the Long-billed Marsh Wren, 423; Defense Note of the Chickadee (*Penthestes atricapillus atricapillus*), 423; Notes from Collins, N. Y., 424; Notes from Essex, Massachusetts, 1921, 425; Notes from Lauderdale, Fla., 425; Birds Using their Wings as a Means of Propulsion under Water, 426; Bird Catastrophe at Gordon, Nebraska, 428; Flight Songs and Mating Songs, 428; Aeolian and Percussion Bird Music, 429.

RECENT LITERATURE.

Nelson s 'Lower California and its Natural Resources,' 431; Chance s 'The Cuckoo's Secret,' 432; Beebe's 'A Monograph of the Pheasants, Vol. III, 433; Van Oort's 'Birds of the Netherlands,' 435; Swann's revised 'Synopsis of the Accipitres,' 435; Mathews 'The Birds of Australia, 436; Bannerman on 'The Birds of Southern Nigeria,' 437; Witherby s 'Handbook of British Birds', 437; Kutchin's 'What Birds Have Done with Me, 437; Recent Papers by Riley, 438; Check List of the Birds of Essex County, Mass., 438; McGregor and Marshall on Philippine Birds for Boys and Girls, 438; The Provencher Society of Natural History of Canada, 439; Todd on the Genus Myiobius, 439; Misses Baxter and Rintoul on some Scottish Breeding Ducks, 439; Chapman on South American Birds, 440; Wetmore and Peters on New American Birds, 440; Bangs on Philippine Birds, 440; Palmer on Game as a National Resource, 441; Hewitt's 'The Conservation of the Wild Life of Canada, 441; Hartert s 'Die Vögel der palaarktischen Fauna,' 442; Food Habits of Two Owls in Britain, 442; Bird Enemies of Two Exotic Insect Pests, 443; The Ornithological Journals, 443; Ornithological Articles in Other Journals, 449; Additional Publications Received, 450.

NOTES AND NEWS

Obituary: George Spencer Morris, 451; Alfred Grandidier, 453; Frank Ernest Woodward, 454; Col. Basil Hicks Dutcher, 454; FieldMus. Orni-

thological Staff, 455; The Baird Club, 455; John H. Sage, birthday celebration, 455; A. O. U. Members Abroad, 456; Fortieth Stated Meeting of the A. O. U., 456.

NUMBER IV.

PAGE

A STUDY OF THE NESTING OF MOURNING DOVES. By *Margaret Morse Nice.* (Plate XVIII.) 457

AN ARIZONA FEEDING TABLE. By *Florence Merriam Bailey* . . . 474

A VISIT TO MIDWAY ISLAND. By *Paul Bartsch* 481

THE FALL MIGRATION OF HAWKS AS OBSERVED AT FISHERS ISLAND, N. Y. By *A. L. Ferguson and H. L. Ferguson* 488

ADDITIONAL DATA REGARDING THE FAMOUS ARBORETUM MOCKING BIRD. By *Charles L. Whittle* 496

NOTES ON SOME LABRADOR BIRDS. By *Harrison F. Lewis.* (Plate XIX.) 503

FIELD STUDIES OF THE ANATIDAE ON THE ATLANTIC COAST. By *Ludlow Griscom.* 513

THE WINTER BIRDS OF THE BILOXI, MISSISSIPPI, REGION. By *Julian D. Corrington* 526

NOTES ON THE ABUNDANCE AND HABITS OF THE BALD EAGLE IN BRITISH COLUMBIA. By *Allan Brooks* 555

A NEW WARBLER FROM SOUTHERN ANNAM. By *J. H. Riley* . . . 560

GENERAL NOTES.

Horned Grebe (*Colymbus auritus*) in Central Missouri, 562; King Eider at Waterford, N. Y., 563; Woodcock Carrying its Young, 563; Oystercatcher on the New Jersey Coast, 564; Breeding of the Florida Gallinule in Ontario, 564; Wood Ibis (*Mycteria americana*) at Cape May, N. J., 565; The Ground Dove in Central Iowa, 566; Mourning Dove (*Zenaidura macroura carolinensis*) in Northern Michigan, 566; Red-shouldered Hawks Using an Old Nest, 566; Hawk Flights at Cape May Point, N. J., 567; Night Hawk (*Chordeiles virginianus*) Roosting on Flag-pole, 568; Olive-sided Flycatcher Summering at Green Pond, N. J., 568; Prairie Horned Lark (*Otocoris alpestris praticola*) in Maryland in Summer, 568; The Greater Redpoll in Erie County, N. Y., 569; Slate-colored Junco nesting at Hornell, N. Y., 569; Strange Feeding Habit of a House Sparrow, 569; Occurrence of the Prothonotary Warbler (*Protonotaria citreo*) at Dyke, Va., 570; The Cerulean Warbler at Washington, D. C., 570; Defense Note of the Chickadee, 572; Peculiar Note of Carolina Chickadee, 572; Bird Interference on High Tension Electric Transmission Lines, 573; Scarcity of Breeding Birds in Duval County, Florida, 573; Notes on Birds of Madison, Wisconsin, and Vicinity, 574; Two Nesting Notes for the Madison Wisconsin, Region, 575; Nesting Notes from Ladysmith, Wisconsin, 575; Scarcity of Arctic Birds in Europe, 578.

RECENT LITERATURE.

Stuart Baker's 'Game Birds of India,' 578; Mathews' 'Birds of Australia,' 579; Lucanus on 'Bird Migration, 580; Van Oort's 'Birds of the

Netherlands' 581; Scoville's 'Wild Folk,' 581; Taverner's 'Birds of Eastern Canada,' 582; Swarth on 'Birds and Mammals of the Stikine River Region,' 582; Lönnberg and Rendahl on the Ornithology of Ecuador, 584; Wetmore on Bird Remains from Caves of Porto Rico, 584; Shufeldt in Subfossil Bird Remains from Bermuda, 585; Recent Papers by Bangs and Penard, 585; Recent Papers by Oberholser, 585; The Ornithological Journals, 586.

CORRESPONDENCE.

Group Photographs of the A.O.U., 589; Life Histories of North American Birds, 590.

NOTES AND NEWS.

Obituary: Dr. Maximilian Fürbringer, 591; Obituary: Hans Christian Cornelius Mortensen, 591; Obituary: Roy Church Woodworth, 592; Personal Mention, 592; Program of Chicago Meeting of A. O. U., 592.

	Page
INDEX	" 595
ERRATA	" 624
DATES OF ISSUE	" 624
OFFICERS OF THE A. O. U. PAST AND PRESENT	" i
COUNCIL OF THE A. O. U. PAST AND PRESENT	" i
CONTENTS	" i
OFFICERS AND MEMBERS	" ix

ILLUSTRATIONS

PLATES

I	Joel Asaph Allen.
II–III	Harlequin Ducks (two views each).
IV	Charles Barney Cory.
V	Nest and Eggs of the Barnacle Goose.
VI	Bittern with Oesophagus Blown up and Deflated (two views).
VII	Roderick Ross MacFarlane.
VIII	Handling a Bird in Banding (two views).
IX.	House and Net Traps (two views).
X.	William Palmer.
XI–XIV.	Duck Traps and Pens (two views each).
XV–XVII.	Handling Birds in Banding (two views each).
XVIII.	Site of Mourning Dove Colony and Young Doves (four views).
XIX.	Sea Birds on the coast of Quebec.

TEXT-CUTS.

Diagram of Duck Walking on Bottom of Stream	Page 19
Neck and Mouth of Bittern	" 198
Fort Anderson	" 206
Map Illustrating Migration of Ducks	" 329
Diagram of Songs of Field Sparrow	" 390

OFFICERS AND COMMITTEES OF THE AMERICAN ORNITHOLOGISTS' UNION, 1922

		Expiration of Term
STONE, WITMER, *President*		November, 1922.
GRINNELL, GEORGE BIRD DWIGHT, JONATHAN	*Vice-Presidents*	" 1922.
PALMER, T. S., *Secretary*		" 1922.
MCATEE, W. L., *Treasurer*		" 1922

ADDITIONAL MEMBERS OF THE COUNCIL.

BENT, ARTHUR C	November, 1922.
DEANE, RUTHVEN	" 1922.
GRINNELL, JOSEPH	" 1922.
OBERHOLSER, HARRY C	" 1922.
OSGOOD, WILFRED H	" 1922.
RICHMOND, CHARLES W	" 1922.
ROBERTS, THOMAS S	" 1922.
BATCHELDER, CHARLES F CHAPMAN, FRANK M FISHER, ALBERT K MERRIAM, C. HART NELSON, EDWARD W RIDGWAY, ROBERT SAGE, JOHN H	Ex-Presidents.

EDITORIAL STAFF OF 'THE AUK'.

STONE, WITMER, *Editor* ..... November, 1922.

COMMITTEES.

Committee on Biography and Bibliography.

PALMER, T. S., *Chairman* — DEANE, RUTHVEN
ALLEN, GLOVER M. — RICHMOND, CHARLES W.

Committee on Bird Protection.

FISHER, A. K., *Chairman* — NELSON, E. W.
RICHMOND, CHARLES W.

Committee on Classification and Nomenclature of North American Birds.

STONE, WITMER, *Chairman* — RICHMOND, C. W.
OBERHOLSER, H. C., *Secretary* — DWIGHT, JONATHAN
PALMER, T. S.

Committee on Publications.

STONE, WITMER, *Chairman* — PALMER, T. S.
DWIGHT, JONATHAN — MCATEE, W. L.

FELLOWS, MEMBERS, AND ASSOCIATES OF THE AMERICAN ORNITHOLOGISTS' UNION.
APRIL, 1922.[1]

FELLOWS

* Life Fellow.

Date of Election

ALLEN, DR. GLOVER M., 234 Berkeley St., Boston Mass..... (1896)1921[2]
ANTHONY, A. W., Nat. Hist. Mus., Balboa Park San Diego, Calif. (1885)1895
BANGS, OUTRAM, Museum Comp. Zoology, Cambridge, Mass..(1884)1901
BARROWS, Prof. W. B., Box 1047, East Lansing, Mich.....1883
BATCHELDER, CHARLES F., 7 Kirkland St., Cambridge, Mass....Founder
BEEBE, C. WILLIAM, New York Zool. Park, New York, N. Y..(1897)1912
*BENT, ARTHUR CLEVELAND, Taunton, Mass.....(1889)1909
BERGTOLD, DR. W. H. 1159 Race St., Denver Colo.....(1889)1921
*BICKNELL, EUGENE P., 30 Pine St., New York, N. Y.....Founder
BISHOP, Dr. LOUIS B., 356 Orange St., New Haven, Conn..... (1885)1901
BROOKS, ALLAN C., Okanagan Landing, B. C.....(1902)1921
BROWN, NATHAN CLIFFORD, 218 Middle St., Portland, Me.....Founder
CHADBOURNE, Dr. ARTHUR P., The Copley-Plaza, Boston, Mass.(1883)1889
CHAPIN, JAMES P., Amer. Mus. Nat. Hist., New York, N. Y.. (1906)1921
CHAPMAN Dr. FRANK M., Amer. Mus. Nat. His., New York, N. Y. (1885)1888
DEANE, RUTHVEN, 112 W. Adams St., Chicago, Ill.....1883
DWIGHT, Dr. JONATHAN, 43 W. 70th. St. New York, N. Y...(1883)1886
FISHER, Dr. ALBERT K., Biological Survey, Washington, D. C....Founder
FLEMING, JAMES H., 267 Rusholme Road, Toronto, Ontario...(1893)1916
FORBUSH, EDWARD H., State House, Boston, Mass.....(1887)1912
FUERTES, LOUIS A., 201 Wyckoff Ave. Ithaca, N. Y.....(1891)1912
GRINNELL, Dr. GEORGE BIRD, 238 E. 15th St., New York, N. Y.....1883
GRINNELL, Dr. JOSEPH, Mus. Vert. Zool., Univ. Calif., Berkeley, Calif. (1894)1901
JONES, LYNDS, Spear Laboratory, Oberlin, Ohio.....(1888)1905
LOOMIS, LEVERETT M., Cal. Acad. Sci., San Francisco, Calif...(1883)1892
*MAILLIARD, JOSEPH. 1815 Vallejo St., San Francisco, Calif... (1895)1914
MCATEE, WALDO LEE, Biclogical Survey, Washington, D. C.. (1903)1914
*MCGREGOR, RICHARD C., Bureau of Science, Manilla, P. I... (1889)1907
MERRIAM, Dr. C. HART, 1919 16th St., N. W., Washington, D. C..Founder
MILLER, W. DEWITT, Am. Mus. Nat. Hist., New York, N. Y.. (1896)1914

---

[1] Members of the Union, and subscribers to The Auk are requested to promptly notify DR. WITMER STONE, Acad. Nat. Sciences, Philadelphia, Pa., of any change of address.

[2] Dates in parentheses indicate dates of joining the Union.

MURPHY, Dr. ROBERT C., Amer. Mus. Nat. Hist., New York, N.Y. (1905)1920
NEHRLING, H., Gotha, Fla.....1883
NELSON, Dr. E. W., Biological Survey, Washington, D. C.....1883
OBERHOLSER, DR. HARRY C., Biol. Survey, Washington, D. C. (1888)1902
OSGOOD, Dr. WILFRED H., Field Museum Nat. Hist., Chicago, Ill. (1893)1905
*PALMER, Dr. T. S., 1939 Biltmore St., N. W., Washington D. C.(1888)1901
RICHMOND, Dr. CHARLES W., U. S. Nat. Museum, Washington, D. C. (1888)1897
RIDGWAY, ROBERT, Route 7, Olney, Ill.....Founder
RILEY, JOSEPH H., U. S. Nat. Mus., Washington, D. C.....(1897)1919
ROBERTS, Dr. THOMAS S., Univ. of Minnesota, Minneapolis, Minn...1883
*SAGE, JOHN H., Portland, Conn.....1883
SAUNDERS, WILLIAM E., 240 Central Ave., London, Ontario.....1883
SHUFELDT, Dr. ROBERT W., 3356 18th St., N. W., Washington, D. C. Founder
STONE, Dr. WITMER, Acad. Nat. Sciences, Philadelphia, Pa....(1885)1892
SWARTH, HARRY S., 2906 Pine Ave., Berkeley, Calif.....(1900)1916
TAVERNER, PERCY A., Victoria Memorial Museum, Ottawa, Canada (1902)1917
TODD, W. E. CLYDE, Carnegie Museum, Pittsburgh, Pa.....(1890)1916
WETMORE, Dr. ALEXANDER, Biol. Survey, Washington, D. C..(1908)1919
WIDMANN, OTTO, 5105 Enright Ave., St. Louis, Mo.....1884

RETIRED FELLOWS

FISHER, Prof. W. K., Hopkins Marine Sta., Pacific Grove, Cal. (1899)1920
HENSHAW, HENRY W., The Ontario, Washington, D. C.....(1893)1918
LAWRENCE, NEWBOLD T., Lawrence, N. Y.....(1883)1913
LUCAS, Dr. FREDERIC A., Am. Mus. Nat. Hist., New York N. Y. (1888)1921
STEJNEGER, Dr. LEONHARD, U. S. Nat. Mus., Washington, D. C. (1883)1911

HONORARY FELLOWS

BAKER, E. C. STUART, Chief Police Office, West India Docks, London, E. 14, England..... (1918)1920
BUTURLIN, SERGIUS ALEXANDROVICH, Wesenberg, Esthonia, Russia. (1907)1916
CAMPBELL, ARCHIBALD JAMES, "Bulgaroo," Wellington Road Box Hill, Victoria, Australia..... (1902)1921
CLARKE, Dr. WILLIAM EAGLE, 53 North Castle St., Edinburgh, Scotland..... (1889)1921

DABBENE, Dr. ROBERTO, Museo Nacional, Buenos Aires, Argentina (1916)1918
EVANS, ARTHUR HUMBLE, 9 Harvey Road, Cambridge, England (1899)1917
GADOW, DR. HANS FRIEDRICH, Cleramendi, Great Shelford, near Cambridge, England.....(1884)1916
GURNEY, JOHN HENRY Keswick Hall, Norwich, England ..... (1883)1921
HAAGNER, ALWIN KARL, Zoological Gardens, Box 754, Pretoria, Transvaal, South Africa..... (1916)1918
HARTERT, DR. ERNST J. O., Zoological Museum, Tring, Herts, England ..... (1891)1902
HELLMAYR, DR. CARL E., Neuhauserstrasse 51. II, Munich, Germany ..... (1903)1911
IHERING, DR. HERMANN VON, Museo Nacional, Peru 208, Buenos Aires, Argentina..... (1902)1911
REV. FRANCIS CHARLES ROBERT JOURDAIN, Appleton Rectory, Abingdon, Berks, England..... (1918)1921
KURODA, NAGAMICHI Fukoyoshi Cho, Akasaka, Tokyo, Japan. (1918)1921
LONNBERG, Dr. A. J. EINAR, Naturhistoriska Riksmuseum, Vetenskapsakademien, Stockholm, Sweden.....(1916)1918
LOWE, DR. PERCY R., Brit. Mus. (Nat. Hist.), Cromwell Road, London, S. W. 7, England..... (1916)1920
MÉNÉGAUX, DR. HENRI AUGUSTE, Museum d'Histoire Naturelle, 55 Rue de Buffon, Paris, France..... (1916)1918
PYCRAFT, WILLIAM PLANE, British Museum (Nat. Hist.) Cromwell Road, London, S. W., 7, England ..... (1902)1911
REICHENOW, DR. ANTON, Königl. Mus. für Naturkunde, Invalidenstrasse, 43, Berlin, Germany..... (1884)1891
ROTHSCHILD, Lord LIONEL WALTER, Zoological Museum, Tring, Herts, England .....(1898)1913
SALVADORI, Count TOMMASO, Royal Zool. Museum, Turin, Italy.... 1883
SCHALOW, Prof. HERMAN, Hohenzollerndamm 50, Berlin-Grünewald, Germany..... (1884)1911
SCLATER, WM. LUTLEY, 10 Sloane Court, Chelsea, London, S. W. 1. England..... (1906)1917
SUSCHKIN, Dr. PETER P., University, Kharkov, Russia.....(1903)1918
VAN OORT, Dr. E. D., Mus. Nat. Hist., Leyden, Holland....(1913)1919

CORRESPONDING FELLOWS

ABBOTT, Dr. WILLIAM L., 400 S. 15th St., Philadelphia, Pa.....1916
ALEXANDER, WILFRED B., Inst. Sci. and Industry, William St., Brisbane, Queensland, Australia.....1921
ALFARO, DON ANASTASIO, San José, Costa Rica.....1888

ARRIBALZAGA, ENRIQUE LYNCH, Resistencia, Chaco, Argentina.....1918
ARRIGONI DEGLI ODDI, Count ETTORE, Univ. of Padua, Padua, Italy 1900
ASHBY, EDWIN, Wittunga, Blackwood, Adelaide, South Australia....1918
BANNERMAN, DAVID ARMITAGE, 6 Palace Gardens Terrace, Kensington, London, W. 8, England.....1916
BATE, Miss DOROTHEA M. A., Bassenden House, Gordon, Berwickshire, Scotland.....1920
BATES, GEO. LATIMER, Bitye, via Ebolowa, Cameroon, W. Africa....1919
BAXTER, Miss EVELYN VIDA, The Grove, Kirkton of Largo, Fifeshire, Scotland.....1919
BEDDARD, FRANK EVERS, Zoöl. Soc., Regents Park, London, England. 1917
BERTONI, Dr. ARNOLDO de WINKELREID, Puerto Bertoni, Paraguay..1919
BLAAUW, FRANS ERNST, Goorlust 'sGraveland, Hilversum, Holland..1920
BONHOTE, JOHN LEWIS, Park Hill House, Carshalton, England.....1911
BUREAU, Dr. LOUIS, École de Médicine, Nantes, France.....1884
BÜTTIKOFER, DR. JOHANNES, Zoölogical Garden, Rotterdam, Holland1886
CARRIKER, M. A., Jr., Apartado 51, Santa Marta, Colombia. (1907) 1912
CARTER, THOMAS, Wensleydale, Mulgrave Rd., Sutton, Surrey, England 1921
CHAMBERLAIN, MONTAGUE, 259 Newbury St., Boston, Mass. (Founder) 1901
CHAPMAN, ABEL, Houxty, Wark-on-Tyne, Northumberland, England..1921
CHROSTOWSKI, TADEUSZ, Muzeum, Przyrodnicze, Krakowski-Przedmiescie 26–28, Warsaw, Poland. 1921
CHUBB, CHARLES, British Museum (Nat. Hist.) Cromwell Road, London, S. W., 7. England.....1911
COLLINGE, Dr. WALTER E., The Museum, York, England.....1918
DALGLEISH, JOHN J., Brankston Grange, Bogside Station, Alloa, Scotland.....1883
DELACOUR, JEAN, Chateau de Cleres, Seine Inférieure, France.....1920
DOLE, SANFORD B., Honolulu, Hawaii.....1883
ECHT, ADOLPH BACHOFEN VON, Nussdorf, near Vienna, Austria.....1883
ELWES, HENRY JOHN, Colesborne, Cheltenham, Gloucestershire, England.....1921
FERRARI-PEREZ, Prof. FERNANDO, Tacubaya, D. F., Mexico.....1885
FREKE, PERCY EVANS, South Point, Limes Road, Folkstone, England 1883
GEE, NATHANIEL GIST, Summerton, S. C. 1919
GHIGI, Dr. ALESSANDRO, R. Univ. Bologna, Italy 1921
GODWIN-AUSTEN, Lieut.-Col. HENRY HAVERSHAM, Nore, Hascombe, Godalming, Surrey, England 1884
GRANT, Major CLAUDE HENRY BAXTER, c o chief Sect'y to Govt, Dares-Salaam, Tanganyika Ter., E. Africa.....1920
GYLDENSTOLPE, Count NILS, Naturhistoriska Riksmuseum, Vetenskapsakademien, Stockholm, Sweden.....1918

HALL, ROBERT, Tasmanian Museum, Hobart, Tasmania.....1916
HARTING, JAMES EDMUND, Portmore Lodge, Weybridge, Surrey, England.....1883
HAVILAND, Miss MAUD D., Old Hall, Newnham College, Cambridge, England.....1920
HELMS, Dr. O., Sanatoriet ved Nakkeböllefjord pr Pejruk, Denmark 1920
HENNICKE, Dr. CARL R., Gera, Reuss, Germany.....1907
HENSON, HARRY V., c/o Hong Kong and Shanghai Banking Corp., 9 Grace Church St., London, E. C., England.....1888
HUDSON, WILLIAM HENRY, Tower House, St. Luke's Road, Westbourne Park, London, W., England 1895
HULL, ARTHUR FRANCIS BASSETT, Box 704, Sydney, N. S. W.....1919
INGRAM, CAPT. COLLINGWOOD, The Grange, Benenden Cranbrook, Kent, England.....1920
IREDALE, TOM, 39 Northcote Ave., Ealing, London, W. 5, England..1918
KLOSS, CECIL BODEN, Kuala Lumpur, Federated Malay States.....1918
LATOUCHE, JOHN DAVID DIGUES, 24 Earlsport Terrace, Dublin, Ireland.....1921
LEACH, Dr. JOHN ALBERT, Eyrecourt, Canterbury, Victoria, Australia 1919
LE SOUÉF, DUDLEY, Zoological Gardens, Melbourne, Australia.....1911
LODGE, GEORGE EDWARD, Hawkhouse, Park Road, Camberley, Surrey, England.....1921
MADÁRASZ, Dr. JULIUS VON, Matyas Sir 14, Budapest, Hungary.....1884
MARIA, HERMANO APOLINAR, Instituto de la Salle, Bogota, Colombia 1921
MATHEWS, GREGORY M., Foulis Court, Fair Oak, Hants, England...1911
MATTINGLY, ARTHUR HERBERT E., Custom House, Melbourne, Australia 1921
MEINERTZHAGEN, Mrs. ANNIE C., Swordale, Evanton, Ross-shire, Scotland.....1919
MEINERTZHAGEN, Col. RICHARD, 63 Bedford Gardens, Kensington, W. 3, London, England.....1921
MENZBIER, Prof. Dr. MICHAEL, University for Women, Devitchje, Pola, Moscow, Russia.....1884
MILLAIS, JOHN GUILLE, Compton's Brow, Horsham, Sussex, England 1911
MITCHEL, Dr. P. CHALMERS, Zoological Society, Regents Park, London, N. W. 8, England.....1919
MOFFETT, LACY I., 5 Quinsan Gardens, Shanghai, China.....1919
NICHOLSON, FRANCIS, Ravenscroft, Windermere, Westmoreland, England.....1884
NICOLL, MICHAEL JOHN, Valhalla House, Zool. Gardens, Giza, Egypt1919
OGILVIE-GRANT, WILLIAM ROBERT, Farley Hill Cottage, Reading, England.....1899
PHILLIPS, MONTAGU AUSTIN, Devonshire House, Reigate, Surrey, England.....1919

RAMSDEN, Dr. CHARLES T., Box 146, Guantanamo, Cuba....(1912) 1918
RIBEIRO, Dr. ALIPIO de MIRANDA, Therigopolis, Estado de Rio Janeiro, Brazil.....1921
RINGER, FREDERIC, Nagasaki, Japan.....1888
RINTOUL, Miss LEONORE JEFFREY, Lahill Largo, Fifeshire, Scotland 1919
ROBERTS, AUSTEN, Pretoria, South Africa.....1920
ROBINSON, HERBERT C., Selangor State Museum, Kuala Lumpur, Federated Malay States.....1918
SETH-SMITH, DAVID, 34 Elsworthy Road, South Hampstead, London, N. W. 3, England.....1920
SHÖLER, Dr. E. LEHN, Uraniavej 14–16, Copenhagen, Denmark.....1920
SNETHLAGE, Dr. EMILIA, Museu Goeldi, Pará, Brazil.....1915
SNOUKAERT VON SCHAUBURG, Baron RENÉ C. E. G. J. van, Doorn, Holland.....1920
SWANN, H. KIRKE, Thorncombe, Lyonsdown Road, New Barnet, Herts. England.....1919
SWYNNERTON, C. F. M., Poste Restante, Dar-es-Salaam, Tanganyika Ter. East Africa.....1918
THEEL, Dr. JOHAN HJALMAR, University of Upsala, Upsala, Sweden 1884
TICEHURST, N. F., 24 Pevensey Road, St. Leonards-on-Sea, England 1918
TSCHUSI ZU SCHMIDHOFFEN, VICTOR, RITTER VON, Villa Tännenhof, bei Hallein, Salzburg, Austria.....1884
TURNER, Miss EMMA L., Langton Close, Girton, Cambridge, England 1920
UCHIDA, SEINOSUKE, No. 1, 1-chome, Kitamachi, Aoyama, Tokyo, Japan.....1919
VAN SOMEREN, Dr. VICTOR G. L., Box 140, Nairobi, British East Africa 1921
WHISTLER, HUGH, c/o. King, King & Co., Bombay, India.....1921
WHITE, HENRY LULLE, Belitrees, Scone, New South Wales.....1920
WHITE, Capt. SAMUEL ALBERT, Wetunga, Fulham, South Australia. 1919
WINGE, Dr. HERLUF, Univ. Zoöl. Museum, Copenhagen, Denmark 1903
WITHERBY, HARRY FORBES, 12 Chesterford Gardens, Hampstead, London, N. W. 3, England.....1916
WORCESTER, Prof. DEAN C., Manila, P. I.....1903
ZELEDON, DON JOSÉ C., San José, Costa Rica.....1884

MEMBERS.

*Life Members

ALLEN, Dr. ARTHUR A., McGraw Hall, Cornell Univ., Ithaca, N. Y. (1909)1914
ALLEN, FRANCIS H., 4 Park St., Boston, Mass.....(1888)1901
ANDERSON, Dr. R. M., Mus. Geol. Survey, Ottawa, Canada...(1907)1914
ATTWATER, H. P., 2120 Genesee St., Houston, Texas.....(1891)1901

BAILEY, VERNON, 1834 Kalorama Ave., Washington, D. C. ...(1887)1901
BAILEY, Mrs. VERNON, 1834 Kalorama Road, Washington D.C.(1885)1901
BAILY, WILLIAM L., 220 E. Lancaster Road, Ardmore, Pa..... (1886)1901
*BALDWIN, S. PRENTISS, Williamson Bldg., Cleveland, Ohio...(1917)1921
BARBOUR, Dr. THOMAS, Mus. Comp. Zoology, Cambridge, Mass. (1903)1914
BARTSCH, Dr. PAUL, U. S. Nat. Museum, Washington, D... C.(1896)1902
BECK, ROLLO HOWARD, c/o Amer. Consul, Papeete, Tahiti... (1894)1917
BOND, FRANK, 3027 Newark St., N. W., Cleveland Park, D. C. (1887)1901
BOWLES, JOHN HOOPER, The Woodstock, Tacoma, Wash.....(1891)1910
BRAISLIN, Dr. WILLIAM C., 425 Clinton Ave., Brooklyn, N. Y.(1894)1902
BROOKS, WM. SPRAGUE, 234 Berkeley St., Boston, Mass.....(1907)1917
BRYAN, WM. ALANSON, Museum, Exposition Park, Los Angeles, Calif. (1898)1901
BRYANT, Dr. HAROLD CHILD, Mus. Vert. Zool. Berkeley, Calif.(1913)1918
BURNS, FRANK L., Berwyn, Pa.....(1891)1901
BUTLER, AMOS W., 52 Downey Ave., Irvington, Indianapolis, Ind. (1885)1901
CHAMBERS, W. LEE, Box 4, Eagle Rock, Calif.....(1907)1913
CHERRIE, GEORGE K., Newfane, Vt.....(1891–1912) (1917) 1918
CLARK, Dr. HUBERT L., Mus. Comp. Zool. Cambridge, Mass..(1886)1902
DAWSON, WM. L., R. D. 1, Santa Barbara, Calif.....(1895)1905
DEANE, WALTER, 29 Brewster St., Cambridge, Mass.....(1897)1901
EATON, Prof. ELON HOWARD, 678 Main St., Geneva, N. Y.... (1895)1907
EVERMANN, Prof. B. W., Calif. Acad. Sci., San Francisco, Calif(1883)1901
FARLEY, JOHN A., 52 Cedar St., Malden, Mass.....(1904)1919
FINLEY, WILLIAM L., Jennings Lodge, Clackamas Co., Ore....(1904)1907
FORDYCE, GEO. L., 40 Lincoln Ave., Youngstown, Ohio.....(1901)1921
GABRIELSON, IRA N., 515 P. O. Bldg., Portland, Ore.....(1912)1920
GAULT, BENJAMIN TRUE, 2313 Washington Blv'd., Chicago, Ill(1885)1903
GOLDMAN, EDWARD A., Biological Survey, Washington, D. C. (1897)1902
GRISCOM, LUDLOW, 37 5th Ave., New York, N. Y.....(1908)1918
HARPER, FRANCIS, Zool. Lab., Cornell Univ., Ithaca, N. Y.....(1907)1917
*HARRIS, HARRY, 18 West 52nd St., Kansas City, Mo. .....(1911)1919
HERRICK, Prof. FRANCIS H., Adelbert College, Cleveland, O...(1913)1919
HERSEY, F. SEYMOUR, 6 Maple Ave., Taunton, Mass.....(1911)1916
HOFFMAN, RALPH, Santa Barbara School, Carpenteria, Calif...(1893)1901
HOLLISTER, NED, Nat. Zoölogical Park, Washington, D. C.... (1894)1910
HOWELL, A. B., 770 S. Pasadena Ave., Pasadena, Calif.....(1909)1916
HOWELL, ARTHUR H., 2919 S. Dakota Ave., Washington, D. C(1889)1902
JACOBS, J. WARREN, 404 S. Washington St., Waynesburg, Pa..(1889)1904
JEFFRIES, WILLIAM A., 11 Pemberton Square, Boston, Mass.. (1883)1901
JOB, HERBERT K., 601 Washington Ave., West Haven, Conn..(1896)1901
KALMBACH, EDWIN R., Biological Survey, Washington, D. C.. (1910)1915

*KENNARD, F. H., Dudley Road, Newton Centre, Mass.....(1892)1912
KNOWLTON, Dr. F. H., U. S. Nat. Mus., Washington, D. C... (1883)1902
*LAW, J. EUGENE, Box 181, Altadena, Calif.....(1907)1916
LINCOLN, F. C., Biological Survey, Washington, D. C.....(1910)1921
MACKAY, GEORGE H., 110 State St., Room 203, Boston, Mass. (1890)1901
MAILLIARD, JOHN W., 230 California St., San Francisco, Calif. (1895)1901
MILLER, Dr. LOYE HOLMES, Southern Branch Univ. Calif., Los Angeles, Calif.....(1918)1920
MOORE, ROBERT THOMAS, Onawa, Me.....(1898)1914
MORRIS, GEORGE SPENCER, Olney, Philadelphia, Pa.....(1887)1914
MORRIS, ROBERT O., 82 Temple St., Springfield, Mass.....(1888)1904
MURDOCH, JOHN, 16 High Rock Way, Allston, Mass.....(1883)1903
NICHOLS, JOHN T., Am. Mus. Nat. Hist., New York, N. Y....(1901)1910
NORTON, ARTHUR H., Mus. Nat. Hist., 22 Elm St., Portland, Me. (1890)1902
PEARSON, T. GILBERT, 1974 Broadway, New York, N. Y.....(1891)1902
PENARD, THOMAS E., 12 Norfolk R'd, Arlington, Mass.....(1912)1919
PENNOCK, CHAS. J., Kennett Square, Pa.....(1888)1901
PETERS, JAMES LEE, Harvard, Mass.....(1904)1918
PHILLIPS, Dr. JOHN C., Wenham, Mass.....(1904)1912
PREBLE, EDWARD A., Biological Survey, Washington, D. C....(1892)1901
RATHBURN, SAMUEL F., 217 14th Ave. N., Seattle, Wash.....(1893)1902
RHOADS, SAMUEL N., 81 Haddon Ave., Haddonfield, N. J.....(1885)1901
RIVES, Dr. WM. C., 1702 Rhode Island Ave., Washington, D. C. (1885)1901
ROBINSON, Col. WIRT, U. S. A., West Point, N. Y.....(1897)1901
*ROGERS, CHARLES H., Nassau Inn, Princeton N. J.....(1904)1921
SAUNDERS, ARETAS A., 48 Longview Ave., Fairfield, Conn.....(1907)1920
SETON, ERNEST THOMPSON, Greenwich, Conn.....(1883)1901
*SHERMAN, Miss ALTHEA R., National via McGregor, Iowa... (1907)1912
*SHIRAS, Hon. GEORGE, 3d, Stoneleigh Court, Washington, D. C. (1907)1915
STEPHENS, FRANK, Nat. Hist. Museum, San Diego, Calif.....(1883)1901
STEPHENS, Prof. T. C., Morningside College, Sioux City, Iowa.(1909)1920
STRONG, Dr. REUBEN M., 706 S. Lincoln St., Chicago, Ill..... (1889)1903
*SWALES, BRADSHAW HALL, U. S. Nat. Mus., Washington D. C., (1902)1909
SWENK, MYRON W., 1410 N. 37th St., Lincoln, Neb.....(1904)1920
THAYER, JOHN ELIOT, Lancaster, Mass.....(1898)1905
TOWNSEND, Dr. CHARLES H., Aquarium, Battery Park, New York, N. Y.....(1883)1901
TOWNSEND, Dr. C. W., 98 Pinckney St., Boston, Mass.....(1901)1905
TROTTER, Dr. SPENCER, Swarthmore College, Swarthmore, Pa.(1888)1901
TYLER, Dr. WINSOR M., 522 Mass. Ave., Lexington, Mass....(1912)1917
WARREN, E. R., 1511 Wood Ave., Colorado Springs, Colo.....(1902)1910

WAYNE, ARTHUR T., Mt. Pleasant, S. C.....(1905)1906
WILLETT, GEORGE, Wrangell, Alaska.....(1912)1914
*WILLIAMS, ROBERT WHITE, Dept. Agric., Washington, D. C..(1900)1918
WOLCOTT, Dr. ROBERT H., State University, Lincoln, Neb....(1901)1903
*WOOD, Dr. CASEY A., 7, W. Madison St., Chicago, Ill.....(1917)1921
WOOD, NORMAN A., Museum Univ. of Mich. Ann Arbor, Mich.(1904)1912
WRIGHT, Dr. ALBERT H., Upland Road, Ithaca, N. Y.....(1906)1919
WRIGHT, Mrs. MABEL OSGOOD, Box 32, Fairfield, Conn. .....(1895)1901

ASSOCIATES

*Life Associates

ABBOTT, CLINTON GILBERT, 4290 Sierra Vista, San Diego, Calif.....1898
ABBOTT, Miss HARRIET, Fryeburg, Me.....1918
ABBOTT, WALDO L., Hotel Somerset, Boston, Mass.....1921
ACHORN, Dr. JOHN W., Pine Bluff, N. C.....1921
ADAMS, BENJAMIN, Wethersfield, Conn.....1911
ADAMS, Rev. CHARLES L., New Canaan, Conn.....1920
ADAMS, WILLIAM C., 43 Clyde St., Newtonville, Mass.....1920
ADAMS, Dr. Z. B., 43 Cottage Farm Road, Longwood, Mass.....1908
ADELMANN, HOWARD BERNHARDT, Stimson Hall, Cornell Univ., Ithaca N. Y.....1919
AHRENS, Dr. T. G., Landanerstrasse 4, Berlin-Wilmersdorf, Germany1920
AIKEN, Hon. JOHN, Superior Court, Court House, Boston, Mass....1905
AIMAR, Dr. CHARLES PONS, 4 Vanderhorst St., Charleston, S. C.....1916
*ALEXANDER, Miss ANNIE M., Box 248 Suisun City, Calif.....1911
ALEXANDER, EDWARD GORDON, E. Arrow St., Marshall, Mo.....1919
ALLEN, Mrs. AMELIA SANBORN, 37 Mosswood R'd, Berkeley, Calif.. 1919
ALLEN, ARTHUR F., Box 717 Sioux City, Iowa.....1919
ALLEN, MARY P., 206 Moore St., Hackettstown, N. J.....1913
ANDERSON, EDWIN C., Dell Rapids, S. D.....1919
ANDERSON, Mrs. J. C., Great Barrington, Mass.....1903
ANGELL, WALTER A., 33 Westminster St., Providence, R. I.....1901
ANKENEY, Miss HELEN, Rt. 10, Xenia, Ohio.....1920
ANTHONY, H. E., Amer. Mus. Nat. Hist., New York, N. Y.....1911
ARMITAGE, LUCIUS, 282 E. 162nd St., New York, N. Y.....1918
ARMOUR, Mrs. GEORGE, Allison House, Princeton, N. J.....1920
ARMSTRONG, EDWARD E., 2249 Calumet Ave., Chicago, Ill.....1904
ARNOLD, EDWARD, Grand Trunk R'y., Montreal, Quebec 1894
ARNOLD, Dr. W. W., 504 N. Nevada Ave., Colorado Springs, Colo...1910
ARTHUR, EDMUND WATTS, 7438 Perrysville Ave., Ben Avon, Pittsburgh, Pa.....1919
ARTHUR, STANLEY CLISBY, 6043 Perrier St., New Orleans, La. 1916

ASPINWALL, Mrs. CLARENCE A., 1839 Wyoming Ave., Washington, D. C.....1916
ATHERTON, EDWARD H., 22 Aldworth St., Boston, 30, Mass.....1917
ATWELL, GEORGE, C., Strafford, N. H.....1920
AVERILL, CHARLES KETCHUM, 406 Stratford Ave., Bridgeport, Conn. 1919
AYRES, Miss MARY ADELINE, 119 High St., Medford Mass.....1915
BABCOCK, CLYDE H., 3426 W. Kiowa St., Colo. Springs, Colo.....1920
BABCOCK, Dean, Long's Peak, Colo.....1911
BACON, FRANCIS L., 236 Winona Ave., Germantown, Pa.....1917
BADÉ, Dr. WM. FREDERIC, 2616 College Ave., Berkeley, Calif.....1916
BADGER, ARTHUR C., 167 Dudley Road, Newton Centre, Mass.....1917
BADGER, LESTER R., 2401 Lake Place, Minneapolis, Minn.....1920
BAER, JOHN LEONARD, Apt. 1, The Maury, 19th & G Sts., N. W., Washington, D. C.....1920
*BAGG, AARON C., 70 Fairfield Ave., Holyoke, Mass.....1916
BAGG, EGBERT, 406 Genesee St., Utica, N. Y.....1916
BAGG, JOHN LEONARD, 89 Lexington Ave., Holyoke, Mass.....1918
BAILEY, ALFRED M., Colorado Mus. Nat. Hist., Denver, Colo.....1918
BAILEY, Prof. GUY A., Geneseo, N. Y.....1910
BAILEY, SAMUEL WALDO, 64 S. Mountain R'd., Pittsfield, Mass.....1909
BAIRD, Miss KATHERINE B., 815 Webster St., N. W., Washington, D. C.....1918
BAIRD, ROBERT LOGAN, 279 Oak St., Oberlin, Ohio.....1921
BAKER, JACK D., Willets, Mendocino Co., Calif.....1920
BALES, Dr. BLENN R., 149 W. Main St., Circleville, Ohio.....1907
BALL, Mrs. BENNET F., Oakville, Conn.....1905
BALL, EDWARD M., East Falls Church, Va.....1918
BALL, Dr. JOS. P., 5001 Frankford Ave., Philadelphia, Pa.....1911
BANCROFT, GRIFFING, 2525 First St., San Diego, Calif.....1921
BARBER, Prof. BERTRAM A., Hillsdale College, Hillsdale, Mich.....1920
BARBER, FURNALD K., La Fox, Kane Co., Ill.....1920
BARBOUR, Rev. ROBERT, Y. M. C. A., Montclair, N. J.....1902
BARCLAY, WILLIAM, Barré, Vermont.....1921
BARLOW, HENRY HOYT, 3131 16th St., N. W., Washington, D. C....1921
BARKER, Miss HELEN, 421 E. Adams St., Sandusky, O.....1918
BARNARD, Judge JOB, 1401 Fairmont St., Washington, D. C.....1886
BARNARD, T. W., 46 Norfolk Road, Arlington, Mass.....1921
BARNES, CHARLES SYDNEY, 19 W. 31st St., Bayonne, N. J.....1920
BARNES, CLAUDE T., 359 Tenth Ave., Salt Lake City, Utah.....1908
BARNES, Hon. R. MAGOON, Lacon, Ill.....1889
BARRETT, CHAS. H. M., 1339 Valley Place S. E., Washington, D. C... 1912
BARRETT, HAROLD LAWRENCE, 172 Huntington Ave., Boston, Mass... 1909
BARROWS, IRA, 15 Maiden Lane, New York, N. Y.....1920
BARRY, Miss ANNA K., 5 Bowdoin Ave., Dorchester, Mass.....1907
BARTLETT, Miss MARY F., 227 Commonwealth Ave., Boston, Mass..1912

BARTRAM, EDWIN B., Bushkill, Pike Co., Pa.....1913
BASSETT, FRANK NEWTON, 1338 8th St., Alameda, Calif.....1919
BATES, Miss EMELINE CLARK, 59-69 Scott St., Chicago, Ill.....1920
BATES, Rev. J. M., Red Cloud, Neb.....1918
BATTEN, GEORGE, 46 Lloyd Road, Montclair, N. J.....1914
BAYNES, ERNEST HAROLD, Meriden, N. H.....1918
BEARD, THEODORE R., 970 Lincoln Place, Boulder, Colo.....1920
BECK, HERBERT H., Lititz, Lancaster Co., Pa.....1921
BECKFORD, ARTHUR W., 10 Park Place, Boulder, Colo.....1919
BELL, Dr. W. B., Biological Survey, Washington, D. C.....1912
BENJAMIN, Mrs. ALFRED, 350 Summer Ave., Newark, N. J.....1920
BENKENSTEIN, Hon. L. J., U. S. Commissioner, Beaumont, Tex.....1921
BENNETT, Rev. GEORGE, Iowa City, Iowa.....1913
BENSON, FRANK W., 46 Washington Sq., Salem, Mass.....1920
BERLIN, Mrs. CORA D., 423 Fourth St., Marietta, Ohio.....1920
BERMAN, DANIEL, 70 Morningside Drive, New York, N. Y.....1919
BICKNELL, Mrs. F. T., 319 S. Normandie Ave., Los Angeles, Calif...1913
BIDDLE, Miss EMILY WILLIAMS, 2201 Sansom St., Philadelphia, Pa .1898
BIGELOW, Mrs. A. P., Ogden, Utah.....1919
BIGELOW, Dr. LYMAN F., 80 Winter St., Norwood, Mass.....1914
BIGELOW, Dr. WILLIAM STURGIS, 56 Beacon St., Boston, Mass.....1920
BISCHOFF, FRANK L., Rock Port, Mo.....1921
BISHOP, SHERMAN C., N. Y. State Museum, Albany, N. Y.....1919
BLACKWELDER, ELIOT, 740 Olive St., Denver, Colo.....1895
BLAISDELL, Miss RUTH, 126 Grand View Ave., Wollaston 10, Mass..1920
BLAKE, BENJAMIN S., Auburndale 66, Mass.....1920
BLINCOE, BENEDICT J., Rt. 13, Dayton, Ohio.....1921
BLOOMFIELD, Mrs. C. C., 723 Main St. W., Jackson, Mich.....1901
BLOWERS, Miss AGNES, Rt. 2, Morrisville, N. Y.....1920
BLUMHARDT, GUSTAV, 80 Hunter Ave., Maywood, N. J.....1921
BOARDMAN, Miss E. D., 416 Marlborough St., Boston, Mass.....1906
BODINE, Mrs. DONALDSON, 4 Mills Place, Crawfordsville, Ind.....1916
BOEHNER, REGINALD STEPHEN, Syracuse Univ., Syracuse, N. Y.....1919
BOGARDUS, Miss CHARLOTTE, Elm St., Coxsackie, N. Y.....1909
BOLT, BENJAMIN FRANKLIN, 1421 Prospect Ave., Kansas City, Mo..1909
BOND, HARRY L., Lakefield, Minn.....1908
BONFILS, FREDERICK G., The Denver Post, Denver, Colo.....1918
BONNETT, D. B., Bay Head, N. J.....1920
BOSSON, CAMPBELL, 19 Brewster St., Boston, Mass.....1906
*BOULTON, WM. B., Morristown Trust Co., Morristown, N. J.....1919
BOULTON, W. R., Jr., Beaver, Pa.....1921
BOURNE, THOMAS L., Hamburg, N. Y.....1913
BOWDEN, Miss ENID, 305 Waverly St., Ottawa, Ont.....1921
BOWDEN, Mrs. MARIE L., 305 Waverly St., Ottawa, Ont.....1921
BOWDISH, B. S., Demarest, N. J.....1891
BOWDISH, Mrs. B. S., Demarest, N. J.....1902

BOWDITCH, Dr. HAROLD, 44 Harvard Ave., Brookline, Mass.....1900
BOWEN, MAURICE S., Box 327 Middleboro, Mass.....1921
BOYD, DONALD H., Box 466, Hobart, Ind.....1920
BOYD, Mrs. HARRIET T., 17 Marsh St., Dedham, Mass.....1917
BOYLE, ASHBY D., 380 E. St., Salt Lake City, Utah.....1921
BRACKEN, Mrs. HENRY M., 1010 Fourth St., S. E., Minneapolis, Minn.1897
BRADBURY, W. C., 1440 Race St., Denver, Colo.....1915
BRADLEE, THOMAS STEVENSON, South Sudbury, Mass.....1902
BRADSHAW, FRED, Regina, Sask.....1921
BRAINERD, Dr. JOHN BLISS, 419 Boyleston St., Boston, Mass.....1921
BRALLIAR, FLOYD, Madison, Tenn.....1921
*BRANDRETH, COURTNEY, Ossining, N. Y.....1905
*BRANDRETH, FRANKLIN, Ossining, N. Y.....1889
BRANDT, HERBERT W., 2025 East 88th St., Cleveland, Ohio.....1915
BRANNON, PETER A., Box 358, Montgomery, Ala.....1919
BREDER, CHAS. M. Jr., 23 Humboldt St., Newark, N. J.....1919
BREWSTER, Mrs. WILLIAM, The Charlesgate, 535 Beacon St., Boston, Mass.....1912
BRICKENSTEIN, Miss MARY R., 1603 19th St., Washington, D. C....1920
BRIDGE, EDMUND, 52 Wyman St., West Medford, Mass.....1910
*BRIDGE, Mrs. EDMUND, 52 Wyman St., West Medford, Mass.....1902
BRIGHT, STANLEY, Eighth and Elm Sts., Reading, Pa.....1921
BRIMLEY, H. H., State Museum, Raleigh, N. C.....1904
BRISTOL, Miss F. L., 169 Columbia Heights, Brooklyn, N. Y.....1921
BROCKWAY, ARTHUR W., Hadlyme, Conn.....1912
BRONSON, BARNARD S., 175 Jay St., Albany, N. Y.....1920
BROOKING, A. M., Inland, Neb.....1920
BROOKS, Rev. EARLE AMOS, 10 Beacon St., Everett, Mass.....1892
BROOKS, GORHAM, 60 State St., Boston, Mass.....1919
BROWN, Miss ANNIE H., 31 Maple St., Stoneham, Mass.....1909
BROWN, Miss BERTHA L., 53 Court St., Bangor, Me.....1918
BROWN, C. EMERSON, Zool. Gardens, W. Philadelphia Pa.....1921
BROWN, EDMUND P., 48 Union St., Belfast, Me.....1920
BROWN, EDWARD J., 22 W. 47th Place, Los Angeles, Calif.....1891
BROWN, G. FRANKLIN, "Stonebridge," Needham, Mass.....1917
BROWN, HARRY A., 40 Talbot St., Lowell, Mass.....1912
BROWN, SAMUEL E., 10 Oakland St., Lexington, Mass.....1920
BROWN, WM. JAMES, 250 Oliver Ave., Westmount, Quebec.....1908
BROWNING, WM. HALL, 16 Cooper Square, New York, N. Y.....1911
BRUEN, FRANK, 29 High St., Bristol, Conn.....1908
BRUMBAUGH, CHALMERS S., 1020 Cathedral St., Baltimore, Md.....1916
*BRUUN, CHAS. A., 314 Reliance Bldg., Kansas City, Mo.....1919
BUGBEE, E. H., Williamstown, N. J.....1921
BULL, CHARLES L., Oradell, N. J.....1920
BULLOCK, D. S., c/o Amer. Embassy, Buenos Aires, Argentina..... 1920

BUNKER, CHARLES D., Kansas University Museum, Lawrence, Kan..1916
BURBANK, Mrs. DELANCEY G., 17 Cherry St., N. Adams, Mass..... 1920
BURGESS, HENRY C., M. D., Brighton Hall Canandaigua, N. Y..... 1920
BURGESS, JOHN KINGSBURY, Chestnut St., Dedham, Mass.....1898
BURGESS, THORNTON WALDO, 61 Washington R'd., Springfield, Mass1919
BURLEIGH, THOS. D., Div. Forestry, Univ. of Ga., Athens, Ga.....1913
BURNETT, WILLIAM L., State Agric. College, Fort Collins, Colo.....1895
BURNHAM, JOHN, 218 Timken Bldg., San Diego, Calif.....1920
BURNHAM, STEWART HENRY, Dept. Botany, College of Agriculture, Ithaca, N. Y.....1919
BURTCH, VERDI, Branchport, N. Y.....1903
BUTCHER, HOWARD JR., Ardmore, Pa.....1921
BUTLER, EDWARD, Baines, La.....1920
BUTLER, Miss VIRGINIA, Stockbridge, Mass.....1919
BUTTERWORTH, FRANK SEILER JR., Mt. Carmel, New Haven Co., Conn.....1918
BUTTS, HARRY W., Youngstown, N. Y.....1920
BYRD, Mrs. HIRAM, University, Ala.....1918
CADUC, EUGENE E., 539 Massachusetts Ave., Boston, Mass.....1910
CADY, Prof. WALTER GUYTON, 49 High St., Middletown, Conn.....1916
CAHN, ALVIN R., College Station, Texas.....1917
CALDWELL, GUY C., 63 Oxford St., Cambridge, Mass.....1920
CALHOUN, Miss EMMA MAY, 216 E. Front St., Monroe, Mich.....1921
CALLENDER, JAMES PHILIPS, 45 Wall St., New York, N. Y.....1903
CALVERT, EARL W., c/o. J. W. Noble, Harrow, Ont., Canada..... 1919
CAMBURN, Mrs. OSMAN M., 6 Oak Knoll, Arlington 74, Mass.....1920
CAMPINI, CHAS. A., 154 E. 33rd St., New York, N. Y.....1919
CANNON, GABRIEL, Spartanburg, S. C.....1920
CARLISLE, GEORGE L., Jr., 550 Park Ave., New York, N. Y..... 1920
CARPENTER, Rev. C. K., 1724 Sunnyside Ave., Chicago, Ill.....1894
CARPENTER, GEORGE I., 129 Dean St., Brooklyn, N. Y.....1907
CARRIGER, H. W., 5185 Trask St., Fruitvale Station, Oakland, Calif..1913
CARRYL, FRANK M., 1 Princeton St., Nutley, N. J.....1919
CARTER, C. M., 702 N. 6th St., St. Joseph, Mo.....1920
CARTER, JOHN D., Lansdowne, Pa.....1907
CARTER, T. DONALD, Am. Mus. Nat. Hist., New York, N. Y.....1921
CARTWRIGHT, W. J., 15 Latham St., Williamstown, Mass.....1920
CASE, Mrs. GEO. B., Englewood, N. J.....1920
CASH, HARRY A., 420 Hope St., Providence, R. I.....1898
CASWELL, Mrs. ARTHUR E., 241 Union St., Athol, Mass.....1918
CHAMBERLAIN, CHAUNCY W., 36 Lincoln St., Boston Mass.....1885
CHAPIN, Miss ANGIE C., 50 Saratoga Ave., Yonkers, N. Y.....1896
CHAPMAN, Mrs. F. M., Englewood, N. J.....1908
CHASE, RICHARD MORTON, 164 Westminister R'd, Rochester, N. Y..1919

CHASE, SIDNEY, 25 Ames Bldg., Boston, Mass.....1904
CHEESMAN, WM. H., Biological Survey, Washington, D. C.....1920
CHILDS, HENRY EVERETT, 864 Broadway, E. Providence, R. I.....1919
CHRISTIE, EDW. H., 5069 Kensington Ave., St. Louis, Mo.....1920
CHRISTOFFERSON, DR. KARL, Sault Ste. Marie, Mich.....1921
CHRISTY, R. T., Windsor, Nova Scotia.....1921
CLARK, ARTHUR L., Forest Home, Rt. 2, Ithaca, N. Y.....1920
CLARK, AUSTIN HOBART, 1818 Wyoming Ave., Washington, D. C...1919
CLARK, CLARENCE H., Lubec, Me.....1913
CLARK, Miss EMILY L., Box 3, St. Johnsbury, Vt.....1920
CLARK, JOSEPH P., M. D., 70 Marlborough St., Boston, Mass.....1920
CLARK, JOSIAH H., 702 E. 23rd St., Paterson, N. J.....1895
CLARKE, CHARLES E., 51 Summit R'd., Medford, Mass.....1907
CLARKE, Miss HARRIET E., 9 Chestnut St., Worcester, Mass.....1896
CLARKE, Miss MARY S., Chadwell, Va.....1916
CLARKE, Miss ROWENA A., Kirkwood, Mo.....1919
CLARKE, STANLEY F., 41 Taconic St., Pittsfield, Mass.....1920
CLEAVES, HOWARD H., Nat. Hist. Mus., Balboa Park, San Diego, Calif.....1907
CLEVELAND, Dr. CLEMENT, Box 211, W. Palm Beach, Fla.....1903
COALE, HENRY K., 528 S. Lincoln Ave., Highland Park, Ill.....1883
COBB, Miss ANNIE W., 58 Paul Revere Road, Arlington, Mass.....1909
COBB, PHILIP HACKER, Loomis Inst., Windsor, Conn.....1917
COBB, Dr. STANLEY, Ponkapog, Mass.....1909
COBURN, Mrs. LEWIS D., East Montpelier, Vt.....1921
CODMAN, JAMES M., 87 Milk St., Boston, Mass.....1920
COFFIN, Mrs. PERCIVAL B., 5714 Blackstone St., Chicago, Ill.....1905
COFFIN, ROBERT L., Mass. Agric'l. Exp. Sta., Amherst, Mass.....1917
COFFIN, Mrs. T. H., 1528 Jefferson Ave., Scranton, Pa.....1921
COGGINS, HERBERT L., 2929 Piedmont Ave., Berkeley, Calif.....1913
COLBURN, ALBERT E., 806 S. Broadway, Los Angeles, Calif.....1891
COLE, JOHN L., Rt. 5, Nevada, Iowa.....1920
COLE, Dr. LEON J., College of Agric., Univ. of Wis., Madison, Wis..1908
COLLINS, ALFRED M., 226 Columbia Ave., Philadelphia, Pa.....1921
COMMONS, Mrs. F. W., 608 Cham'r of Commerce, Minneapolis, Minn 1902
CONGER, ALLEN C., 527 Forest St., E. Lansing, Mich.....1919
CONOVER, HENRY B., 6 Scott, St., Chicago, Ill.....1920
CONROE, IRWIN A. Alfred University, Alfred, N. Y.....1921
COOK, CECIL DURWARD, 64 Flatt Ave., Hamilton, Ont.....1921
COOK, FRANKLIN P., Seaside Hotel, Atlantic City, N. J.....1920
COOK, FREDERICK, W., 1604 East Harrison St., Seattle, Wash.....1915
*COOKE, Miss MAY THACHER, 1328 Twelfth St., Washington, D. C..1915
COOKMAN, ALFRED, 2929 B. St., San Diego, Calif.....1920
COOLIDGE, PHILIP T., 31 Central St., Bangor, Me.....1919

COPE, FRANCIS R., Jr., Dimock, Pa.....1897
COPELAND, Miss ADA B., 1103 White Ave., Grand Junction, Colo....1912
COPELAND, MANTON, 88 Federal St., Brunswick, Me.....1900
CORDIER, Dr. A. H., 415 Benton Blv'd., Kansas City, Mo.....1920
CORRINGTON, J. D., Dept. Biology Univ. S. C., Columbia, S. C..... 1921
CORYELL, SHERMAN, 1500 Hood Ave , Chicago, Ill.....1921
COUES, Dr. WM. P., 31 Massachusetts Ave., Boston, Mass.....1920
COULTAS, WILLIAM F., 156 Quadrangle Bldg . Iowa City, Ia.....1921
COURT, EDWARD J., 1723 Newton St., N. W., Washington, D. C.... 1919
COVELL, Dr. HENRY H., 1600 East Ave., Rochester, N. Y.....1918
COX, RODMAN DAYTION, 56 College Ave., Rochester, N. Y.....1919
CRABBE, Mrs. MARY E., 80 Oak St., Far Rockaway, N. Y..... 1921
CRAIG, WALLACE, Univ. of Maine, Orono, Me.....1912
CRANE, Miss CLARA L., Dalton, Mass.....1904
CRANE, Mrs. ZENAS, Dalton, Mass.....1904
CRIDDLE, NORMAN, Treesbank, Man.....1918
CROCKER, WM. T., 263 Lexington Ave., New York, N. Y.....1920
*CROSBY, MAUNSELL S., Rhinebeck N. Y.....1904
CROSS, ALBERT ASHLEY, Huntington, Mass.....1918
CROSS, Mrs. R. J., 210 Mercer St., Princeton, N. J.....1921
CROSSMAN, ANNIE F., Mus. Nat. Hist., Pittsfield, Mass.....1920
CROWELL, Miss J. OLIVIA, Dennis, Mass.....1918
CUDWORTH, WARREN H., 15 Beacon Ave., Norwood, Mass.....1919
CUMMINGS, Miss EMMA G., 16 Kennard Road, Brookline, Mass.....1903
CUNNINGHAM, J. WALTER, 3009 Dunham Ave., Kansas City, Mo....1919
CURRIER, EDMONDE SAMUEL, 416 E. Chicago St., Portland, Ore.....1894
CURRIE, ROLLO P., 632 Keefer Pl., Washington, D. C.....1895
CURRY, HASKELL BROOKS, 60 Bay State Road, Boston, 17, Mass....1916
CURTIS, CHARLES P., 244 Beacon St., Boston, Mass.....1915
CURTIS, ROY Q., JR., 11 W. 76th St., New York, N. Y.....1919
CUTTER, Miss LUCIA B., Jaffrey, N. H.....1920
DADISMAN, A. J., 115 Beverly Ave., Morgantown, W. Va.....1921
DALEY, Miss MARY WOOD, Sleighton Farm, Darling P. O., Delaware Co., Pa.....1920
DANE, Mrs. ERNEST B., Chestnut Hill, Mass.....1912
DANFORTH, STUART T., College of Agr., Mayaguez, P. R.....1916
DANIELS, EDWARD S., 7th and Elm Sts., St. Louis, Mo.....1919
DAVENPORT, Mrs. ELIZABETH B., Brattleboro, Vt.....1898
DAVIDSON, Mrs. FRANCES S., 1917 Emerson Ave., S., Minneapolis, Minn.....1921
DAVIES, Miss DOROTHY E., Blackinton, Mass.....1920
DAVIS, Miss Bertha E., 22 Cypress Place, Brookline, 46, Mass.....1920
DAVIS, JOHN M., 737 M. St., Eureka, Calif.....1920
DAVIS, R. N., Everhart Museum, Scranton, Pa.....1920
DAWSON, Prof. RALPH W., 1105 N. 33rd St., Lincoln, Neb.....1920

DAY, CHESTER SESSIONS, 16 Browne St., Brookline 47, Mass.....1897
DEAN, F. ROY, 3465 S. Spring Ave., St. Louis, Mo.....1919
DEAN, R. H., 720 Quintard Ave., Anniston, Ala.....1913
DEANE, GEORGE CLEMENT, 80 Sparks St., Cambridge, Mass.....1899
DEARBORN, SAMUEL S., 411 Marlborough St., Boston, Mass.....1919
DELOACH, R. J. H., 10145 Longwood Drive, Chicago, Ill.....1910
DELURY, Dr. RALPH E., Dominion Observatory, Ottawa, Canada...1920
DEVANY, J. L., Annapolis Royal, Nova Scotia 1921
DENNIS, Dr. LABAN, 71 Ridge Ave., Orange, N. J.....1921
DENSMORE, Miss MABEL, 910 4th St., Red Wing, Minn.....1910
DERBY, Dr. RICHARD, Oyster Bay, L. I., N. Y.....1898
DERY, Dr. D. A., 112 Rue St. Joseph, Quebec, Canada.....1921
DEWEY, Dr. CHARLES A., 78 Plymouth Ave., Rochester, N. Y..... 1900
DEWIS, Dr. JOHN W., 69 Newberry St., Boston 17, Mass.....1920
DEXTER, Prof. JOHN SMITH, Univ. Sask. Saskatoon, Sask.....1919
DEXTER, LEWIS, 1889 Elm St., Manchester, N. H.....1915
DEXTER, Rev. SMITH OWEN, Concord, Mass.....1920
DICE, LEE RAYMOND, Mus. Zool., Ann Arbor, Mich.....1918
DICKENS, Miss ELIZABETH, Block Island, R. I.....1921
DICKEY, DONALD R., San Rafael Heights, Pasadena, Calif.....1907
DILLE, FREDERICK M., Niobrara Reservation, Valentine, Neb.....1892
DINGLE, EDWARD VON S., Summerton, S. C.....1920
DINGS, G. MCCLELLAND, 2161 Railway Exch. Bldg., St. Louis, Mo..1919
DIONNE, C. E., Laval University, Quebec, Canada.....1893
DIXON, FREDERICK J., 111 Elm Ave., Hackensack, N. J.....1891
DIXON, JOSEPH S., Univ. of Calif., Berkeley, Calif.....1917
DONAHUE, RALPH J., 228 N. Emerson Ave., Bonner Springs, Kan...1919
DOOLITTLE, E. A., Box 44, Painesville, Ohio.....1921
DRAPER, Miss SARAH L., Saxton's River, Vermont.....1921
DRAPER, WALLACE S., Wayland, Mass.....1920
DRIER, THEODORE, 35 Remsen St., Brooklyn, N. Y.....1919
DRUMMOND, Miss MARY, 510 Spring Lane, Lake Forest, Ill.....1904
DUANE, ARTHUR, "Cool Gales," Sharon, Conn.....1920
DUBOIS, ALEXANDER D., 327 S. Glenwood Ave., Springfield, Ill.....1918
DUER, HARRY ELDON, 519 Schofield Bldg., Cleveland, Ohio..... 1921
DULL, Mrs. A. P., L. 211 N. Front St., Harrisburg, Pa.....1900
DUNBAR, Miss LULA, R. D. 1, Elkhorn, Wis.....1918
DUNN, Mrs. H. A., Rt. 3, Box 63, Athol, Mass.....1920
DURFEE, OWEN, 727 Madison St., Fall River, Mass.....1887
DYE, HAROLD G., 202 Parsells Ave., Rochester, N. Y.....1921
DYKE, ARTHUR CURTIS, 205 Summer St., Bridgewater, Mass.....1902
EADIE, GUY L., Berwyn, Pa.....1920
EARL, D. OSBOURNE, 17 Bates St., Cambridge, Mass.....1919
EARL, THOMAS M., 258 Lexington Ave., Columbus, Ohio.....1921
EASTMAN, Major FRANCIS B., Camp Grant, Ill.....1909

EASTMAN, Miss SARAH C., 51 Chapel St., Portland, Me.....1920
*EATON, HOWARD, Wolf, Sheridan Co., Wyo.....1918
EATON, Miss MARY S., 8 Monument St., Concord, Mass.....1909
EATON, SCOTT HARRISON, Box 653, Lawrenceville, Ill.....1912
EATON, WARREN FRANCIS, 17 Weld Hall, Cambridge, Mass.....1921
EDSON, JOHN M., Marietta Road, Bellingham, Wash.....1886
EDSON, WM. L. G., 54 Fairview Ave., Rochester, N. Y.....1916
EHINGER, Dr. CLYDE E., 728 Franklin St., Keokuk, Iowa.....1904
EIFRIG. Prof. C. W. GUSTAVE, 504 Monroe Ave., Oak Park, Ill.....1901
EIMBECK, Dr. AUGUST F., New Haven, Mo.....1906
EKBLAW, WALTER ELMER, 711 W. Nevada St., Urbana, Ill.....1911
ELIOT, WILLARD AYRES, 1011 Thurman St., Portland, Ore.....1918
ELLIOT, Mrs. JANE SHIELDS 2900 Q. St., N. W., Washington. D. C...1921
ELLIOT, Miss SARAH J., Union Hospital, Terre Haute, Ind.....1920
ELLS, GEORGE P., Norwalk, Conn.....1904
EMERSON, W. OTTO, Hayward, Calif.....1916
EMLEN, ARTHUR COPE, "Awbury," Germantown, Philadelphia, Pa..1921
ENGLISH, Mrs. T. F., 3631 Campbell St., Kansas City, Mo.....1919
ENO, HENRY LANE, Princeton, N. J.....1918
ERICHSEN, W. J., 2311 Barnard St., Savannah, Ga.....1919
ESLUCK, Miss AUGUSTINE W., 58 Highland Ave., Greenfield, Mass.1920
ESTERLY, Dr. CALVIN O., Occidental College, Los Angeles, Calif.....1921
EVANS, Dr. EVAN M., 550 Park Ave., New York, N. Y.....1916
EVANS, FRANK C., Crawfordsville, Ind.....1919
EVANS, WILLIAM B., Moorestown, N. J.....1897
EVANS, WILLIAM V., 410 East Geyser St., Livingston, Mont.....1921
EYER, GEO. A., Short Hills, N. J.....1918
FAIRMAN, Miss MARIAN, 4744 Kenwood Ave., Chicago, Ill.....1920
FALGER, Mrs. WM., 224 Magnolia Ave., Modesto, Calif.....1918
FARLEY, FRANK L., Camrose, Alberta.....1920
FAXON, ALLAN HART, 7 Edwards St., Southbridge, Mass.....1916
FAY, S. PRESCOTT, 53 State St., Boston, Mass.....1907
FELGER, ALVA HOWARD, North Side High School, Denver, Colo.....1898
FELL, Miss EMMA TREGO, Holicong, Bucks Co., Pa.....1903
FERGUSON, ALFRED L., 11 Thomas St., New York, N. Y.....1920
FERGUSON, HARRY L., 11 Thomas St., New York, N. Y.....1920
FERRES, Mrs. WALTER D., 78 Sunset Ave., Ridgewood, N. J.....1921
FIELD, Dr. GEORGE W., 2807 18th St., N. W., Washington, D. C...1910
FIELD, WM. L. W., Milton Acad., Milton, Mass.....1920
FISHER, Miss ELIZABETH WILSON, 2222 Spruce St., Philadelphia, Pa.1896
FISHER, Dr. G. CLYDE, American Mus. Nat. Hist., New York, N. Y 1908
FITZPATRICK, WM. J., c/o. Brown, Durrell Co., 104 Kingston St., Boston, Mass.....1920
FLEISHER, EDWARD, 1068 Park Place, Brooklyn, N. Y.....1916
FLETCHER, L. B., 54 Cotswold Rd., Brookline, Mass.....1921

FLETCHER, LYLE, Norton, Kan.....1919
FLETCHER, Mrs. MARY E., Proctorville, Vt.....1898
FLOYD, CHARLES BENTON, 382 Wolcott St., Auburndale, Mass..... 1916
FLOYD, J. L., 508 New Harter Bank Bldg. Canton, Ohio..... 1921
FOLSOM, Miss IDA M., Normal School, Presque Isle, Me.....1920
FOOT, Dr. NATHAN CHANDLER, Readville, Mass.....1916
FORAN, PHILIP FULFORD, 147 Wilbrod St., Ottawa, Ontario, Can.... 1921
FORBES, RALPH E., 328 Adams St., Milton, Mass.....1917
FORD, EDWARD R., 126 Madison Ave., S. E., Grand Rapids, Mich...1920
FORD, Miss LOUISE PETIGRU, "The Heights," Aiken, S. C.....1919
FORTNER, Prof. HARRY C., Univ. Tennessee, Knoxville, Tenn.....1920
*FOSTER, FRANCIS A., Edgartown, Mass.....1918
FOSTER, FRANK B., Haverford, Pa.....1916
FOSTER, Dr. G. S., 967 Elm St., Manchester, N. H.....1921
FOTHERGILL, Miss E. R., 208 S. Whitney St., Hartford, Conn.....1920
FOWLER, FREDERICK HALL, 221 Kingsley Ave., Palo Alto, Calif.....1892
FOWLER, HENRY W., Acad. Nat. Sciences, Philadelphia, Pa.....1898
FRASER, DONALD, Johnstown, N. Y.....1902
FREAS, ELLA M., 845 W. State St., Trenton, N. J.....1921
FREEMAN, Dr. C. D., Box 113, Medina, Ohio.....1920
FREEMAN, Prof. DANIEL, 711 7th St., S. Fargo, N. D.....1920
FREEMAN, Miss HARRIET E., 37 Union Park, Boston, Mass.....1903
FRENCH, Mrs. A. J., R. F. D. 1, Carlton, Oregon.....1921
FRENCH, CHARLES H., Canton, Mass.....1904
FRENCH, Mrs. CHAS. H., Canton, Mass.....1908
FRIEDMANN, HERBERT, Graduate School, Cornell Univ., Ithaca, N. Y.1921
FRIEDMAN, RALPH, 32 Garden Place, Brooklyn, N. Y..... 1921
FROST, ALLEN, c/o. Trussell Mfg. Co., Poughkeepsie, N. Y..... 1919
FRY, HENRY J., 88, 27th St., Elmhurst, L. I., N. Y.....1916
*FUGUET, HOWARD, 560 Bullitt Bldg., Philadelphia, Pa.....1919
FULLER, HENRY C., 1348 Euclid St., Washington, D. C.....1916
FULLER, Mrs. T. OTIS, Needham, Mass.....1909
FUNKE, HERBERT F. L., 116 Broad St., New York, N. Y.....1921
GAGE, ARTHUR, Camp Douglas, Rt. 2, Box 36, Wisconsin.....1920
GALVIN, E. R., 5056 DuPont Bldg., Wilmington, Del 1921
GANIER, ALBERT F., 2507 Ashwood Ave., Nashville, Tenn.....1917
GARDINER, CHARLES BARNES, 175 W. Main St., Norwalk, Ohio..... 1903
GARDNER, ASTON COLEBROOK, "Little Tangley", Ember Lane, Esher, Surrey, England.....1919
GARDNER, Mrs. E. P., 140 Gibson St., Canandaigua, N. Y.....1920
GARDNER, Mrs, W. H., Bucksport, Me.....1920
GARST, Dr. JULIUS, 29 Oread St., Worcester, Mass.....1916
GAUDETTE, Miss MARIE E., Park Museum, Providence R. I.....1921
GERTH, WALTER G., 3929 Greenview Ave, Chicago, Ill.....1918

GERTKEN, Prof. SEVERIN, St. John's University, Collegeville, Minn...1912
GIANINI, CHAS. A., Poland, N. Y.....1911
GIBSON, LANGDON, Box 794, Clearwater, Fla.....1887
GIFFORD, PAUL C., 73 Whittier Ave., Olneyville, R. I.....1921
GIGNOUX, CLAUDE, 73 Tunnel Road, Berkeley, Calif.....1921
GILBERT, Mrs. F. M., Walpole, N. H.....1919
GILCHRIST, Mrs. D. A., 1519 W. Washington St., Phoenix, Ariz..... 1920
GILES, ROSCOE I., 82 Newton St., Marlborough, Mass.....1921
GILLIAM, ROBERT A., 810 Southwestern Life Bldg., Dallas, Texas... 1920
GILLIN, JAMES R., Ambler, Pa.....1921
GILMAN, M. FRENCH, Banning, Calif.....1907
GLADDING, Mrs. JOHN R., 30 Stimson Ave., Providence, R. I.....1912
GLASSFORD, S. ROBERT, 63 Highland Ave., Ridgewood, N. J.....1921
GLEASON, Mrs. C. H., 700 Madison Ave., S. E., Grand Rapids, Mich1917
GLOYD, HOWARD K., Wellsville, Kan..... 1920
GORLITZ, WALTER A., 170 Nunda Boulevard, Rochester, N. Y.....1916
GOLSAN, LEWIS S., Box 97, Prattville, Ala.....1912
GOODE, Mrs. F. B., Sharon, Mass.....1918
GOODRICH, Miss JULIET T., State Line, Vilas County, Wis.....1904
GORDON, HARRY E., 307 Laburnum Cres., Rochester, N. Y.....1911
GORE, JOHN K., 69 High St., Orange, N. J.....1921
GORMLEY, A. LIGNORI, Box 80, Arnprior, Ont.....1918
GORST, CHARLES C., 28 Beauford R'd., Jamaica Plain, Boston, Mass. 1916
GOULD, JOSEPH E., Box 65, Barbourville, Ky.....1889
GOWANS, Miss EDITH, Kent, Normal College, Kent, Ohio.....1921
GOWANLOCK, J. NELSON, Dept. Zool. Univ. Chicago, Ill.....1919
GOWDY, EARL R., 60 Washington St., Leominster, Mass.....1920
GRANGE, WALLACE B., Ladysmith, Wis.....1920
GRANGER, WALTER W., Amer. Mus. Nat. Hist., New York, N. Y... 1891
GRANT, Mrs ADELE L., Dept. Botany, Cornell Univ., Ithaca, N. Y. 1919
GRANT, WM. W., 600 Castle St., Geneva, N. Y.....1910
GRAVES, Miss BESSIE M., Box 80, Bethel, Vt.....1920
GRAVES, Mrs. CHARLES B., 4 Mercer St., New London, Conn..... 1905
GRAY, GEORGE W., Greenvale, Poughkeepsie, N Y.....1920
GRAY, GEORGE M., Box 89, Woods Hole, Mass.....1916
GREEN, HORACE OAKES, 114 North Ave., Wakefield, Mass.....1917
GREEN, Miss. FLORENCE L., 29 Laurel St., Concord, N. H.....1921
*GREEN, MORRIS MILLER, 39 Wyoming Ave., Ardmore, Pa.....1921
GREENE, EARLE R., 108 Orme Circle, Atlanta, Ga.....1921
GREENLAW, JOS. M., 28 Budleigh St., Beverly, Mass.....1920
GREENOUGH, HENRY VOSE, 39 Worthington Road, Brookline, Mass..1901
GREGORY, STEPHEN S., JR., 456 Surf St., Chicago, Ill.....1916
GRIFFEE, WILLET E., Route 3, Corvallis, Ore.....1919
GRIFFIN, BERTRAM S., 22 Currier Ave., Haverhill, Mass.....1917

GRIM, WILLIAM H., Hamburg, Pa.....1921
GROSS, DR. ALFRED O., Bowdoin College, Brunswick, Me.....1907
GROSVENOR, Miss LULU E., 304 Mass. Ave., Washington, D. C..... 1920
GUNTHORP, Prof. HORACE, 2107 E. 55th St., Univ. of Wash., Seattle, Wash.....1919
HABERYAN, H. D., Box 32, Farmerville, La.....1921
HADLEY, ALDEN H., Monrovia, Ind.....1906
HADLEY, FRED N., 1305 Roberts Ave., Whiting, Ind..... 1921
HADELER, E. W., 520 So. State St., Painesville, Lake Co., Ohio..... 1920
HAGAR, J. A., Marshfield Hills, Mass.....1914
HAILE, H. PENNINGTON, 28 Edwards St., Springfield, Mass.....1919
HALE, CHARLOTTE T., 11 Loomis St., Burlington, Vt..... 1921
HALLINAN, THOMAS, 212 Madison Ave., Paterson, N. J.....1919
HALLINEN, JOSEPH E., Cooperton, Okla.....1919
HAMILTON, Dr. BAKER A., Highland Park, Ill.....1920
HANDLEY, CHAS. O., Box 195, Lexington, Va.....1916
HANKINSON, THOS. L., State Normal College, Ypsilanti, Mich.....1897
HANNA, G. DALLAS, California Acad. Sci., San Francisco, Calif.....1919
HANNA, WILSON CREAL, 1000 Pennsylvania Ave., Colton, Calif.....1919
HANNUM, WILLIAM E., Primos, Delaware Co., Pa..... 1920
HARDON, Mrs. HENRY W., Wilton, Conn.....1905
HARING, Mrs. INEZ M., 1774 Delmont Ave., East Cleveland, Ohio.. 1921
HARKIN, Hon. JAMES B., Commissioner Canadian Nat. Parks, Ottawa, Canada.....1921
HARPER, SAMUEL A., 230 N. Keystone Ave., River Forest, Ill.....1920
HARRINGTON, Mrs. A. B., Lincoln, Mass.....1919
HARRINGTON, RALPH M., 595 Ashland Ave., Buffalo, N. Y.....1915
*HARRISON, GEO. L., Jr., 400 Chestnut St., Philadelphia, Pa..... 1919
HARRISON, HARRY MORGAN, 319 Penn St., Camden N. J.....1919
HART, CECIL, Rt. 6, Box 432, Los Angeles, Calif.....1921
HART, Miss HELEN, Williamstown, Mass.....1920
HARTLEY, GEO. INNESS, 344 W. 87th St., New York, N. Y.....1919
HARTSHORN, HAROLD IRA, 53 S. 12th St., Newark, N. J.....1918
HARVEY, JOHN L., 3 Moody St., Waltham, Mass.....1916
HASBROUCK, HENRY C., 929 West End Ave., New York, N. Y.....1920
HASKELL, Miss SADIA, 1236 11th St., N. W., Washington, D. C.....1916
HASTINGS, WALTER E., Box 1, South Lyon, Mich.....1921
HATHAWAY, ALTON HASTINGS, 25 Oakland St., Lexington, Mass.....1921
HATHAWAY, Mrs. E. L., Spring St., R. D. 1, W. Bridgewater, Mass.....1920
HATHAWAY, HARRY S., Box 1466, Providence, R. I.....1897
HAVEMEYER, H. O., Mahwah, N. J.....1893
HAVEMEYER, H. O., Jr., Mahwah, N. J.....1919
HAVEN, HERBERT, M. W., 500 Forest Ave., Portland, Me.....1920
HAWES, Dr. EDWARD E., Hyannis, Mass.....1920
HAWK, JOHN L., 5843 Plymouth Ave., St. Louis, Mo.....1920

HEALEY, ALDEN P., 2006 Northampton St., Holyoke, Mass.....1919
HEALY, DR. DANIEL J., Experiment Sta., Lexington, Ky.....1921
HEATH, Miss CHARLOTTE M., Box 76, Easton, Mass.....1920
HEDGES, CHAS. F., 1505 Pearl St., Miles City, Mont.....1919
*HELME, ARTHUR H., Miller Place, N. Y.....1888
HEMENWAY, AUGUSTUS, Tavern Club, Bolyston Pl., Boston, Mass...1920
HEMPEL, Miss KATHLEEN, Elkader, Iowa.....1919
HEMPHILL, ASHTON ERASTUS, Holyoke, Mass.....1919
HENDERSON, HARLIN C., Carpinteria, Santa Barbara Co., Calif.....1920
*HENDERSON, J. B., 16th St., & Florida Ave., N. W., Washington, D. C.1918
HENDERSON, Judge JUNIUS, 627 Pine St., Boulder, Colo.....1903
HENDERSON, WALTER C., 4727 13th St., N. W., Washington, D. C.. 1917
HENDRICKSON, W. F., 276 Hillside Ave., Jamaica, N. Y.....1885
HERMAN, Dr. WILLIAM C., 19 West 7th St., Cincinnati, Ohio.....1921
HERMAN, THEODORE L., 273 Neal Dow Ave., New Brighton, N. Y. 1916
*HERRICK, HAROLD, 123 William St., New York, N. Y.....1905
HERRICK, NEWBOLD L., 60 Wall St., New York, N. Y.....1913
HERRICK, N. LAWRENCE, Cedarhurst, N. Y.....1917
HILL, JAMES HAYNES, 108 State St., New London, Conn.....1897
HILL, Mrs THOMAS R., Box 491, Chatauqua, N. Y.....1903
HIMMAL, WALTER J., Old Science Bldg. Dept. Botany, Iowa City, Iowa.....1920
HINCKLEY, GEO. LYMAN, Redwood Library, Newport, R. I.....1912
HINE, Prof. JAMES STEWART, Ohio State Univ., Columbus, Ohio....1899
HITCHCOCK, FRANK H., 120 Broadway, New York, N. Y.....1921
HIX, GEORGE E., 100 W. 91st St., New York, N. Y.....1904
HOLLAND, HAROLD MAY, Galesburg, Ill.....1910
HOLLAND, R. P., 2273 Woolworth Bldg. New York, N. Y.....1920
HOLLAND, Dr. WILLIAM J., Carnegie Museum, Pittsburgh, Pa.....1899
HOLLISTER, G. B., 4 E. 5th St., Corning, N. Y.....1919
HOLLISTER, WARREN D., Delavan, Wisc.....1901
HOLMAN, RALPH H., 25 Livermore Rd., Wellesley Hills, Mass.....1907
HOLT, ERNEST G., c/o Amer. Embassy, Rio de Janeiro, Brazil.....1911
HONYWILL, ALBERT W., JR., 211 Ridgefield St., Hartford, Conn.....1907
HORSFALL, ROBERT BRUCE, 1457 E. 18th. St., Portland, Ore.....1905
HORSEY, RICHARD E., Highland P'k,. Reservoir Ave., Rochester, N. Y.....1919
HOTCHKISS, NEIL, R't. 2, Marcellus, N. Y.....1919
HOUGHTON, CLARENCE 533 Washington Ave., Albany, N. Y.....1920
HOWE, CLIFTON D., Univ. of Toronto, Toronto, Ontario.....1921
HOWE, Mrs. E. L., Princeton, N. J.....1921
HOWE, INEZ ADDIE, Fairbank Mus. Nat. Sci., St. Johnsbury Vt.....1921
HOWLAND, R. H., 164 Wildwood Ave., Upper Montclair, N. J.....1903
HOYT, WILLIAM H., Box 425, Stamford, Conn.....1907
HUBBARD, C. ANDRESEN, 287 E. 44th St., Portland, Ore.....1916

HUBBARD, Prof. MARIAN E., 15 Appleby Road, Wellesley, Mass.....1916
HUBBARD, RALPH, 1038 University Ave., Boulder, Colo.....1916
HUBER, WHARTON, 225 St. Marks Sq., Philadelphia, Pa.....1915
HUEY, L. M., Nat. Hist. Mus., Balboa Park, San Diego, Calif.....1920
HUGHES, GEO. T., Box 153, Plainfield, N. J.....1919
HUGHES, Dr. WILLIAM E., 3945 Chestnut St., Philadelphia, Pa.....1920
HULL, Mrs. BAKER, The Washington Apts., Baltimore, Md.....1921
HUNN, JOHN T. SHARPLESS, 1218 Prospect Ave., Plainfield, N. J....1895
HUNT, CHRESWELL JOHN, 5847 W. Superior St., Chicago, Ill.....1919
HUNT, Miss LUCY O., 185 Beacon St., Hartford, Conn.....1919
HUNT, RICHARD M., Mus. Vert. Zool., Berkeley, Calif.....1918
HURD, Miss FRANCES A., 43 West Ave., S. Norwalk, Conn.....1919
HUSHER, Mrs. GERTRUDE H., 821 S. Hope St., Los Angeles, Calif...1918
HYDE, Mrs. S. E., Regina, Idaho.....1918
HYDE, SIDNEY, 1534 Boswell Ave., Topeka, Kansas.....1921
HYSLOP, SAMUEL, 42 Bellevue St., Newton, Mass.....1919
INGERSOLL, ALBERT M., 908 F St., San Diego, Calif.....1885
ISHAM, CHAS. B., 50 W. 67th St., New York, N. Y.....1891
JACKSON, Dr. HARTLEY H. T., Biological Survey, Washington, D. C. 1910
JACKSON, JOHN W., Belchertown, Mass.....1920
JACKSON, RALPH W., R. D. 1, Cambridge, Md.....1918
JAMES, NORMAN, Catonsville, Md.....1913
JAMES, THOMAS A., Augusta, Me.....1920
JANVRIN, Dr. E. R. P., 515 Park Ave., New York, N. Y.....1919
JAY, WILLIAM, 6662 Germantown Ave., Mt. Airy, Philadelphia, Pa..1921
JENKS, CHAS. W., Bedford, Mass.....1912
JENNEY, Hon. CHARLES F., 100 Gordon Ave., Hyde Park, Mass.....1905
JENNINGS, Dr. GEO. H., Jewett City, Conn.....1918
JENNINGS, RICHARD D., 129 Harrison St., East Orange N. J.....1913
JENSEN, J. K., U. S. Indian School, Santa Fe, N. Mex.....1912
JEWETT, STANLEY G., 582 Bidwell St., Portland, Ore.....1906
JOHNSON, Prof. CHAS. E., Dept. Zool., Kan. Univ., Lawrence, Kan..1919
JOHNSON, FRANK E., 16 Amackassin Terrace, Yonkers, N. Y.....1888
JOHNSON, Mrs. GRACE P., Museum Nat. Hist., Springfield, Mass....1921
JOHNSON, REGINALD M., 60 State St., Boston, Mass.....1920
JOHNSON, WARD L., Lawrence School, Hewlett, Long Island, N. Y...1920
JOHNSTONE, WALTER B., Edgewood, Arrow Lake, B. C.....1920
JONES, JESSE L., 198 Dewey St., Edgewood, Pittsburgh, Pa.....1921
JONES, Dr. LOMBARD CARTER, Falmouth, Mass.....1917
JONES, S. PAUL, 204 Frame Ave., Waukesha, Wis.....1920
JONES, WILLIAM F., Norway, Me.....1918
JONES, STERLING P., 690 Bonita Ave., Webster Groves, Mo.....1921
JORDAN, A. H. B., Everett, Wash.....1888
JOY, ERNEST, Grand Menan, N. B.....1921
JUMP, Mrs. EDWIN R., 97 Oakleigh Road, Newton, Mass.....1910
JUNG, CLARENCE S., 553 Prospect Ave., Milwaukee, Wis.....1921

KAEDING, GEO. L., Cortez, Lander Co., Nev.....1918
KANE, Mrs. SUSAN MARY, Mich. Club Bldg., Seattle, Wash.....1919
KEAYS, JAMES EDWARD, 328 St. George St., London, Ontario, Canada. 1921
KEE, HUNTER, Marlinton, W. Va.....1920
KEIL, ELLA ANNA, Box 45, N. Tonawanda, N. Y.....1921
KELLOGG, RALPH T., Silver City, N. M.....1913
KELSO, Dr. JOHN E. H., Edgewood, Lower Arrow Lake, B. C.....1915
KENNEDY, EDWARD H., South Easton, Mass.....1920
KENNEDY, Dr. HARRIS, Readville, Mas.....1916
*KENNEDY, HARRY H., 105 Vine St., Reno, Nev.....1920
KENT, DUANE E., 39 Morse Place, Rutland, Vt.....1913
KENT, EDWARD G., 9 Highland Ave., Madison, N. J.....1919
KENT, EDWIN C., 19 Liberty St., New York, N. Y.....1907
KESSEL, MARCEL H., 695 Auburn Ave., Buffalo, N. Y.....1920
*KIDDER, NATHANIEL T., Milton, Mass.....1906
KILGORE, WILLIAM, Jr., Zool. Mus, Univ. Minn., Minneapolis, Minn 1906
KING, F. M., 111 E. Cedar St., Webster Grove, Mo.....1921
KING, LEROY, 116 E. 22nd St., New York, N. Y.....1901
KINGSBURY, FREDERICK S., 97 Oliver St., Boston, Mass.....1916
KIRKHAM, Mrs. JAMES W., 275 Maple St., Springfield, Mass.....1904
*KIRKHAM, STANTON D., 152 Howell St., Canandaigua, N. Y.....1910
KIRKPATRICK, HARRY C., 1166 Water St., Meadville, Pa.....1921
KIRKWOOD, FRANK C., R. F. D. 3, Monkton, Md.....1892
*KIRN, ALBERT J. B., R. F. D. 4, Solomon, Kan.....1918
KITTREDGE, JOSEPH, Jr., Forest Service, Washington, D. C.....1910
KLOSEMAN, Miss J. E., Beal Hall, 20 Charlesgate W., Boston, Mass. 1909
KNAEBEL, ERNEST, 3707 Morrison St., Chevy Chase, D. C.....1906
KNOLHOFF, FERDINAND WILLIAM, Amityville, N. Y.....1890
KOBBE, FREDERICK W., 103 E. 86th St., New York, N. Y.....1921
KOPMAN, HENRY H., Dept. Conservation, 207 N. O. Court Bldg., New Orleans, La.....1921
KREHBIEL, LEONARD, W. 10th St., Upland, Calif.....1920
KRETZMAN, Prof. P. E., 3705 Texas Ave., St. Louis, Mo.....1913
KUBICHEK, W. F., 926 Church St., Iowa City, Ia.....1919
KUSER, ANTHONY R., Bernardsville, N. J.....1908
KUSER, Mrs. ANTHONY R., Bernardsville, N. J.....1910
KUSER, JOHN DRYDEN, Bernardsville, N. J.....1910
LABARTHE, JULES, 2727 Russell St., Berkeley, Calif.....1920
LADD, HARRY STEPHEN, 4354 McPherson Ave., St. Louis, Mo.....1919
LADOW, STANLEY V., 25 Fifth Ave., New York, N. Y.....1919
LAFRANCHISE, Miss MARY L. Y., 31 Sherbrooke Ave., Hull, Quebec, Canada.....1921
LAING, HAMILTON M., 1277 E. 32nd St., Portland, Ore.....1917
LAIRE, Mrs. MARGARET P., 72 Rebecca Ave., Pleasantville, N. Y....1921
LAMB, CHAS. R., 8 Highland St., Cambridge, Mass.....1910
LANCASHIRE, Mrs. JAMES HENRY, 7 East 75th St., New York, N. Y. 1909

LANG, HERBERT, Amer. Mus. Nat. Hist., New York, N. Y.....1907
LANGDON, ROY M., 847 E. Colfax Ave., Denver, Colo.....1919
LANGILLE, JAMES H., Kensington, Md.....1921
LANO, ALBERT, Fayetteville, Ark.....1917
LARRABEE, Prof. AUSTIN P., Yankton College, Yankton, S. Dak.....1918
LASTRETO, C. B., 260 California St., San Francisco, Calif.....1919
LATHAM, ROY, Orient, N. Y.....1916
LAUGHLIN, Miss EMMA E., 127 Walnut St., Barnesville, Ohio.....1920
LAUGHLIN, J. A., 318 E. Gordon St., Marshall, Mo.....1919
LAURENT, PHILIP, 31 E. Mt. Airy Ave., Philadelphia. Pa.....1902
LAWRENCE, A. G., City Health Dept., Winnipeg, Man.....1920
LAWSON, RALPH, 88 Washington Sq. East, Salem, Mass.....1917
LEACH, FRANK A., 217 Hillside Ave., Piedmont, Calif.....1921
LEARNED, Miss AGNES M., Wilkins St., Hudson, Mass.....1920
LEAVITT, Mrs. FLORENCE R., 42 Forest St., Lexington, Mass.....1919
LEE, Mrs. L. W., El Cajon, San Diego Co., Calif.....1920
LEFFINGWELL, DANA J., Aurora, N. Y.....1919
LEISTER, CLAUDE W., McGraw Hall, Ithaca, N. Y.....1916
LENGERKE, JUSTUS VON 257 Highland Ave., Orange, N. J.....1907
LEONHARD, W. J., Shoreham, Vt.....1920
LEOPOLD, NATHAN F., JR., 4754 Greenwood Ave., Chicago, Ill.....1916
LERMOND, N. W., Thomaston, Me.....1921
LEVEY, Mrs. WILLIAM, 58 Doris Ave., Brookline, Mass.....1915
LEWIS, GEORGE P., 4559 Forrestville Ave., Chicago, Ill.....1920
LEWIS, HARRISON F., 92 Argyle Ave., Ottawa, Canada.....1912
LEWIS, Mrs. HERMAN E., 180 Grove St., Haverhill, Mass.....1912
LIBBEY, ROBERT M., 911 22nd St., N. W., Washington, D. C.....1920
LIGHTFOOT, WILLIAM G., 197 Gileson St., Canandaigua, N. Y.....1920
LIEBOLD, ERNEST G., 589 Boston Blv'd E., Detroit, Mich.....1918
LIGON, J. STOKLEY, Box 131, Albuquerque, New Mexico.....1912
LINGS, GEO. H., Richmond Hill, Cheadle, Cheshire, England.....1913
LINK, HENRY A., P. O. Box 76, Waterloo, Ind.....1920
LITTLE, LUTHER, 2nd, 1403 Garfield Ave., So. Pasadena, Calif.....1913
LLOYD, HOYES, 406 Queen St., Ottawa, Canada.....1916
LOCKE, Dr. EDWIN A., 311 Beacon St., Boston, Mass.....1920
LOCKWOOD, DEAN P., Haverford Pa.....1921
LOMAX, Dr. CLAUDE, Holland, Indiana.....1921
LONG, CHAS. IRVING, 130 5th Ave., Roselle, N. J.....1918
LONG, HARRY V., 260 Clarendon St., Boston, Mass.....1920
LORD, J. ANDERSON, 13 Ash St., Danvers, Mass.....1919
LORING, J. ALDEN, Owego, N. Y.....1917
LOTHROP, Dr. OLIVER A., Waban, Mass.....1920
LOW, ETHELBERT I., 38 E. 64th St., New York, N. Y.....1907
LUCE, Mrs. FRANCIS P., Box 216, Vineyard Haven, Mass.....1912
LUCE, MATTHEW, Cohasset, Mass.....1920

LUM, EDWARD H., Chatham, N. J. 1904
LUNN, Miss LULU M., 724 Villa St., Racine, Wisc. 1920
LUNN, Miss MARGARET A., 131 A–B Govt. Hotels, Washington, D.C 1919
LYNCH, JOSEPH, 400 Washington St., Perth Amboy, N. J. 1920
LYON, WILLIAM I., 124 Washington St., Waukegan, Ill. 1921
MACKAYE, JAMES, 160 Elm St., N. Cambridge, Mass. 1921
MACKINTOSH, RICHARDS B., 5 Howard Ave., Peabody, Mass. 1919
MACLAY, MARK W., Jr., 107 E. 81st St., New York, N. Y. 1905
MACCOY, CLINTON V., 1244 Beacon St., Brookline, Mass. 1920
MACLEAN, Miss MAE, 514 Terry Ave., Seattle, Wash. 1920
MACREYNOLDS, GEORGE, 76 E. State St., Doylestown, Pa. 1917
MADDOCK, Miss EMELINE, Monte Vista, Philadelphia, Pa. 1897
MADISON, HAROLD LESTER, Lennox Bldg., Cleveland, Ohio. 1912
MAGEE, M. J., 603 South St., Sault Ste. Marie, Mich. 1919
MAHER, J. E., 351 Communipaw Ave., Jersey City, N. J. 1902
MARBLE, RICHARD M., Woodstock, Vt. 1907
MARCOTTE, Rev. LEON, St. Charles Seminary, Sherbrooke, Quebec, Canada 1921
MARKS, EDWARD SIDNEY, 655 Kearney Ave., Arlington, N. J. 1915
MARRS, Mrs. KINGSMILL, 9 Commonwealth Ave., Boston, Mass. 1903
MARSHALL, ALFRED, Daphne, Baldwin Co., Ala. 1916
*MARSHALL, Mrs. ELLA M. O., New Salem, Mass. 1912
MARTENET, MARK S., 429 N. Washington St., Alexandria, Va. 1919
MARTIN, FRED I., R't 1, Box 58, Manchester, N. H. 1921
MARTIN, JOHN C., 909 State St., Owosso, Mich. 1921
MASON, C. E., Jr., 25 Exeter St., Boston, Mass. 1921
MATHEWS, F. SCHUYLER, 17 Frost St., Cambridge, Mass. 1917
MAY, FRANKLIN H., 807 E. Adams St., Syracuse, N. Y. 1920
MAYFIELD, Dr. GEORGE R., Kissam Hall, Nashville, Tenn. 1917
MAYNARD, CHAS. J., 457 Crafts St., W. Newton, Mass. 1921
MAYNARD, Dr. HERBERT E., 178 Commonwealth Ave., Boston, Mass. 1921
MCCABE, T. T., The Beresford, 1 W. 81st. St., New York, N. Y. ... 1920
MCCALL, W. W., Millbrook Road, Haverford, Pa. 1921
MCCLINTOCK, NORMAN, 504 Amberson Ave., Pittsburgh, Pa. 1900
MCCONNELL, T. L., 151 Center Ave., Emsworth, Pittsburgh, Pa. ... 1915
MCCOOK, PHILIP J., 413 E. 57th St., New York, N. Y. 1895
MCGRAW, HARRY A., 1805 15th Ave., Altoona, Pa. 1917
MCGREW, ALBERT D., 5611 Stanton Ave., Pittsburgh, Pa. 1917
MCILHENNY, EDWARD AVERY, Avery Island, La. 1894
MCINTIRE, Mrs. HERBERT BRUCE, 4 Garden St., Cambridge, Mass. 1908
MCKEOUGH, Dr. GEO. T., R't. 1, Erie Manor, Blenheim, Ontario, ... 1921
MCLAIN, ROBERT BAIRD, Box 546, Wheeling W. Va. 1893
MCLELLAN, Miss MARY E., 2935 Pine Ave., Berkeley, Calif. 1920
MCMILLAN, Mrs. GILBERT N., Delafield Ave., Riverdale on Hudson, New York, N. Y. 1902

McMULLEN, T. E., 551 Bailey St., Camden, N. J.....1920
McNEIL, Dr. CHAS. A., 1112 West 4th St., Sedalia, Mo.....1919
McNEIL, GEORGE M., 195 Lincoln St., Winthrop, Mass.....1920
McPHAIL, FRANK L., 1315 Hill St., Ann Arbor, Mich.....1920
MEAD, Mrs. E. M., 303 W. 84th St., New York, N. Y.....1904
MEAD, LYLE G., 807 N. Pine Ave., Chicago, Ill.....1921
MEANS, CHAS J., 29 c/o Dr. Gregg, Wellesley, Mass.....1912
MEDSGER, OLIVER P., 9 Columbia Ave., Arlington, N. J.....1919
MELLEN, ELEANOR, M. D., 291 Lake Ave., Newton Highlands, Mass.1920
MENGEL, G. HENRY, 739 Madison Ave., Reading Pa.....1913
MENNINGER, WM. C., 106 23rd St., Elmhurst, L. I., N. Y.....1919
MERCUR, J. WATTS, Jr., Wallingford, Pa.....1920
MERRIAM, HENRY F., Orange Heights Ave., W. Orange, N. Y.....1905
MERRILL, D. E., Rogers, Ark.....1913
MERRILL, HARRY, 316 State St., Bangor, Maine.....1883
MERRIMAN, R. OWEN, 96 W. 2nd St., Hamilton, Ont.....1920
*MERSHON, W. B., Saginaw, Mich.....1905
METCALF, F. P., Biological Survey, Washington, D. C.....1917
METCALF, Z. P., N. C. State College, West Raleigh, N. C.....1913
MEYER, Major G. RALPH, 51st Artillery Camp Eustis, Va.....1913
MEYER, Miss HELOISE, Lenox, Mass.....1913
MICKEL, Prof. CLARENCE R., Box 417, Rocky Ford, Colo.....1920
MIDDLETON, R. J., Jeffersonville, Pa.....1920
MILLER, ANSEL B., Springs, Pa.....1921
MILLER, Miss BERTHA S., Capstone Farm, R. 3, Kingston, N. Y ...1915
MILLER, Miss CARRIE ELLA, 36 Cottage St., Lewiston, Me.....1918
MILLER, CECIL A., 76 Flatt Ave., Hamilton, Ontario, Canada.....1921
MILLER, Miss JULIA, R't. 3, Hornell, Steuben Co., N. Y.....1921
MILLER, Miss MARY MANN, 5928 Hayes Ave., Los Angeles, Calif... 1921
MILLER, Mrs. ELISABETH C. T., 1010 Euclid Ave., Cleveland, O.... 1916
MILLS, ENOS A., Estes Park, Colo.....1916
MILLS, WIER R., Pierson, Iowa.....1920
MINER, LEO D., 1836 Vernon St., N. W., Washington, D. C.....1913
MITCHELL, CATHERINE ADAMS, Riverside, Ill.....1911
MITCHELL, HORACE HEADLEY, Provincial Mus., Regina, Sask.....1918
MITCHELL, Dr. WALTON I., Paonia, Delta Co., Colo.....1893
MONK, H. C., Avoca Apts., Nashville, Tenn.....1921
MOODY, A. J., c/o. Aetna Life Ins. Co., Hartford, Conn.....1918
MOODY, Dr. WM. LADD, Newport, R. I.....1918
MOORE, Mrs. DWIGHT, Cedar Hill, Closter, N. J.....1920
MOORE, ELIZABETH PUTNAM, North Anson, Me.....1905
MOORE, R. L., 205 W. Wilbarger St., Vernon, Texas.....1921
MOORE, WILLIAM H., Mouth Kiswick, Rt. 1, York Co., N. B.....1920
MORCOM, G. FREAN, 2906 Pine Ave., Berkeley, Calif.....1886
MORGAN, BRENT M., 224 11th St., S. W., Washington, D. C.....1919
MORLEY, S. GRISWOLD, 2635 Etna St., Berkeley, Calif.....1911

MORRIS, Miss LUCY N., 90½ Midland Ave., Montclair, N. J.....1920
MORRISON, ALVA, 2 Garden Terrace, Cambridge, Mass.....1915
MORRON, THADDEUS D., 1901 Park St., Hartford, Conn.....1920
MORSE, FRANCIS E., 23 Bradlee St., Dorchester 24, Mass.....1921
MORSE, FRANK E., 162 Boylston St., Boston, Mass.....1921
MORSE, GEO. F., Jr., Grove Hall, Mass.....1919
MORSE, HARRY GILMAN, Huron, Ohio.....1912
MORSE, Miss M. E., 3513 Bloomington Ave., Minneapolis, Minn....1919
MORSS, CHAS. B., 35 Greanleaf St., Bradford, Mass.....1918
MOSELEY, Prof. EDWIN LINCOLN, Bowling Green, Ohio.....1918
MOSES, Mrs. EDMUND QUINCEY, Apt. 4. B, 700 Riverside Drive, New York, N. Y.....1919
MOSHER, FRANKLIN H., 17 Highland Ave., Melrose Highlands, Mass1905
MOULTON, HERBERT F., 36 W. Main St., Ware, Mass.....1920
MOUSLEY, WM. HENRY, Hatley, Quebec, Canada.....1915
MULLEN, JAMES L., 1264 Logan Ave., Salt Lake City, Utah.....1919
MUNRO, J. A., Okanagan Landing, British Columbia.....1913
MUNRO, Mrs. WALTER S., 40 N. Main St., So. Norwalk, Conn.....1920
MURIE, O. J., 219 7th Ave., S., Moorhead, Minn.....1913
MURPHY, Dr. EUGENE EDMUND, 432 Telfair St., Augusta, Ga.....1919
MURPHY, EDW. A. C., 94 Prospect St., New Haven, Conn.....1920
MURPHY, Mrs. GRACE E. B., 87 Front Ave., Bronxville, N. Y.....1919
MURRAY, EDGAR H., 2940 Clinton Ave., Detroit, Mich.....1919
MUSGRAVE, Mrs. MARK E., Box 765, Phoenix, Ariz.....1920
MUSSELMAN, GUY N., 392 E. Main St., New Holland, Pa.....1921
MYERS, Mrs. HARRIET W., 311 N. Ave. 66, Los Angeles, Calif.....1906
MYERS, Miss LUCY F., 127 Academy St., Poughkeepsie, N. Y.....1898
NAUMAN, E. D., Box 606, Sigourney, Iowa.....1918
*NEELY, JAMES C., 135 High St., Brookline, Mass.....1919
NEFF, JOHNSON A., Marionville, Mo.....1919
NEWBERRY, W. F., 233 Broadway, New York, N. Y.....1920
NEWCOMB, C. A., Jr., Rt. 3, Pontiac, Mich.....1920
NICE, Mrs. MARGARET M., Norman, Okla.....1920
NICHOLS, L. NELSON, N. Y. Public Library, New York, N. Y.....1917
NICHOLS, RODMAN A., 27 Broad St., Salem, Mass.....1919
NICHOLSON, NEVIN G., 410 Elm St., Grove City, Pa.....1920
NILES, Mrs. C. F., Hopedale, Mass.....1920
NIMS, Mrs. LUCIUS, 17 Union St., Greenfield, Mass.....1913
NINNINGER, Prof. H. H., McPherson College, McPherson, Kan.....1920
NOBLE, ELEANOR G., 66 Sparks St., Cambridge, Mass.....1916
NOBLE, G. KINGSLEY, Am. Mus. Nat. Hist., New York, N. Y.....1913
NOKES, Dr. I. D., 1120 Marsh St., Los Angeles, Calif.....1915
NOLTE, Rev. FELIX, St. Benedict's College, Atchison, Kan.....1903
NORRIS, EDWARD, 301 W. Springfield Ave., Philadelphia, Pa.....1916
NORRIS, J. PARKER, JR., 2122 Pine St., Philadelphia, Pa.....1904

NOTT, Miss ETHEL A., 309 S. Pine St., Reedsburg, Wis.....1920
NUGENT, JAMES R., 772 Broad St., Newark, N. J.....1920
*O'CONOR, JOHN CHRISTOPHER, 24 E. 33rd St., New York, N. Y....1921
OGDEN, DAVID B., 23 Alton Place, Brookline, Mass.....1920
OGDEN Dr. HENRY VINING, 141 Wisconsin St., Milwaukee, Wis..... 1897
OLDYS, HENRY, Silver Springs, Md.....1896
ONDESCO, Miss MARY E., Gardner, Ill.....1920
O'ROARK, Mrs. L. S., R. 2, Mt. Kemble, Norristown, N. J.....1919
OSBORN, Prof. HENRY F., Am. Mus. Nat. Hist., New York, N. Y... 1919
OSBORNE, ARTHUR A., 183 Lowell St., Peabody, Mass.....1912
OSLER, H. S., 1, Rosedale Road, Toronto, Ont.....1920
OTTEMILLER, FREE, 752 S. George St., York, Pa.....1914
OVER, WILLIAM H., Geol. and Nat. Hist., Survey, Vermillion S. Dak1921
OVERTON, Dr. FRANK, Patchogue, N. Y.....1909
*OWEN, Miss JULIETTE AMELIA, 306 N. 9th St., St. Joseph, Mo.....1897
PACKARD, WINTHROP, 1442 Washington St., Canton, Mass.....1917
PAINE, AUGUSTUS G., JR., 31 E. 69th St., New York, N. Y.....1886
PAINE, CHARLES JACKSON, 705 Sears Bldg., Boston, Mass.....1917
PAINTER, KENYON V., 3240 Fairmount Blv'd., Cleveland, Ohio.....1920
*PALMER, Miss E. D., 1741 S. Harvard Blv'd., Los Angeles, Calif...1918
PALMER, R. H., Instituto Geologico, City of Mexico, D. F., Mexico...1916
PALMER, Dr. SAMUEL C., 712 Ogden Ave., Swarthmore, Pa.....1899
PALMER, Mrs. T. S., 1939 Biltmore St., N. W., Washington, D. C...1918
PANGBURN, CLIFFORD H., 299 Madison Ave., New York, N. Y.....1907
PARKER, ARTHUR JOHN, So. Lincoln, Mass.....1920
*PARKER, EDWARD LUDLOW, Nashawtuc Rd., Concord, Mass.....1916
PARKER, HERBERT, So. Lancaster, Mass.....1920
PATCH, Dr. EDITH M., College Road, Orono, Me..... 1921
PATTEN, Dr. STEPHEN K., 141 Milk St., Boston, Mass.....1920
PAUL, LUCIUS H., 436 Carter St., Rochester, N. Y.....1908
PAXTON, Mrs. REGINA A., 59 Walmer Road, Toronto, Ontario..... 1917
PEABODY, Rev. P. B., Blue Rapids, Kan.....1903
PEACOCK, W. C., State and Adams St., Chicago Ill.....1921
PELLEW, Miss M. J., 1637 Mass. Ave., N. W., Washington, D. C... 1919
PEMBER, KARL A., Woodstock, Vt.....1921
PEMBERTON, JOHN ROY, Box 1112, Tulsa, Okla.....1918
*PENROSE, Dr. CHAS. BINGHAM, 1720 Spruce St., Philadelphia, Pa...1919
PEPPER, Dr. WM., 1813 Spruce St., Philadelphia, Pa.....1911
PERCIVAL, Mrs. D. C., 306 Commonwealth Ave., Boston, Mass..... 1921
PERINE, KEBLE, 3 Ware St., Dorchester, Mass.....1917
PERKINS, Dr. ANNE E., State Hospital, Collins, N. Y.....1917
PERKINS, ARTHUR W., 21 High St., Farmington, Me.....1915
PERKINS, EDW. H., Box 52, Waterville, Me.....1920
PERKINS, Dr. GEORGE H., Univ. of Vt., Burlington, Vt.....1912
PERRY, Dr. HENRY JOSEPH, 45 Bay State Road, Boston, Mass.....1909

PERSCHON, ERICH, Young America, Carver Co., Minn.....1921
PETER, JULIUS C., Detroit Trust Co., Detroit, Mich.....1921
PETERS, ALBERT S., Lake Wilson, Minn.....1908
PETERS, JOS. G., Jr., North Truro, Mass.....1921
PETERSON, ALFRED, Pipestone, Minn.....1920
PETTY, ORVILLE A., Chapel St. & Sherman Ave., New Haven, Conn. 1919
PHELPS, FRANK M., 212 E. 4th St., Elyria, Ohio.....1912
PHELPS, Mrs. J. W., Box 36, Northfield, Mass.....1899
PHELPS. WARREN A., 19 Tennyson Ave., Pittsfield, Mass.....1920
PHILIPP, PHILIP B., 220 Broadway, New York, N. Y.....1907
PHILLIPS, ALEXANDER H., 54 Hodge Road, Princeton, N. J.....1891
PHILLIPS, CHAS. LINCOLN, 5 West Weir St., Taunton, Mass.....1912
PHILLIPS, CHAS. P., Univ. Minn., Minneapolis, Minn.....1919
*PHILLIPS, JOHN M., 2227 Jane St., Pittsburgh, Pa.....1920
PIERCE, WRIGHT MCEWEN, Box 343, Claremont, Calif.....1918
PILSBURY, FRANK O., 1088 Main St., Walpole, Mass.....1917
PINCHOT, GIFFORD, 1218 Real Estate Trust Bldg., Philadelphia, Pa..1910
PIRNIE, MILES D., McGraw Hall, Ithaca, N. Y.....1919
PITMAN, Mrs. FRED H., Winthrop, Me.....1921
PLATT, Hon. EDMUND, 2339 Ashmead Pl., N. W., Washington, D. C. 1917
POE, Miss MARGARETTA, 1204 N. Charles St., Baltimore, Md.....1899
POMEROY, E. F., Battes College, Lewiston, Me.....1920
POOLE, EARL L., Public Museum, Reading, Pa.....1916
POPE, ALEXANDER, 1013 Beacon St., Brookline, Mass.....1919
POPE, E. F., Box 113, El Reno, Okla.....1920
PORTER, LOUIS H., Stamford, Conn.....1893
POST, WILLIAM S., Bernardsville, N. J.....1911
POTTER, JULIAN K., 563 Bailey St., Camden, N. J.....1912
POTTER, LAWRENCE B., Gower Ranch, Sask.....1919
POWERS, Miss EVA L., Greenwich Village, R. D., Mass.....1920
PRAEGER, WILLIAM E., 421 Douglas Ave., Kalamazoo, Mich.....1892
PRATT, Hon. GEO. D., Pratt Ins'te, 215 Ryerson St., Brooklyn, N. Y.1917
PRENTISS, Rev. WM. C., Plainfield, Conn 1921
PRESCOTT, Mrs. CLARA R., 87 High St., Orange, N. J.....1921
PRICE, JOHN HENRY, Crown W. Ranch, Knowlton, Mont.....1906
PRICE, LIGON, Marlinton, W. Va.....1913
PRILL, Dr. A. G., Scio, Oregon,.....1921
PRITCHARD, Mrs. F. A., 203 N. Court St., Medina, Ohio.....1918
PROCTOR, GEORGE N., 35 Congress St., Boston, Mass.....1919
PULITZER, JOSEPH, Jr., St. Louis Post-Dispatch, St. Louis, Mo..... 1921
PURDIE, Miss EVELYN, 49 Ware Hall, 383 Harvard St., Boston, Mass1921
PURDY, JAMES B., R. F. D. 1, Plymouth, Mich.....1893
PURDY, WILLIAM B., Milford, Oakland Co., Mich.....1921
QUARLES, EMMET AUGUSTUS, 139 E 7th St., Plainfield, N. J.....1918
QUILLIN, ROY W., 1025 Summit Ave., San Antonio, Tex.....1920

RACEY, KENNETH, 3262 First Ave., Vancouver, B. C.....1921
RAKER, Miss MARY E., 1484 Sherman St., Portland, Ore.....1918
RAND, Mrs. HARRY SEATON, 1899 Mass. Ave., Cambridge 13, Mass..1920
RATLIFF, Hon. WALTER S., R. R. B., Box 276, Richmond, Ind.....1918
RAVEN, HENRY CUSHIER, c/o. South Side Bank, Bayshore, N. Y....1918
RAYMOND, Miss BESSIE, 564 Diagonal Road, Akron, Ohio.....1920
REA, Dr. PAUL M., Lennox Bldg., Cleveland, Ohio.....1912
REAGH, Dr. ARTHUR LINCOLN, 39 Maple St., West Roxbury, Mass..1896
REED, Mrs. BESSIE, 1609 Vermont St., Lawrence, Kan.....1920
REED, Miss CLARA EVERETT, Brookfield, Mass.....1919
REED, MONTAGUE, 357 Fifth Ave., Rosemont, Montreal, Canada....1921
REESE, Mrs. ROBT. M., 3016 Dumbarton Ave., N. W., Wash., D. C. 1920
REGAR, H. SEVERN, 1400 De Kalb St., Norristown, Pa.....1916
REHN, JAMES A. G., Acad. Nat. Sciences, Logan Sq., Philadelphia, Pa. 1901
REICHENBERGER, Mrs. VICTOR M., Hotel Essex, New York, N. Y..... 1919
REID, Mrs. BRUCE, Gulf Refinery, Port Arthur, Tex.....1918
REID, RUSSELL, 208 3rd. St., Bismarck, N. Dak.....1919
REIS, JACOB A., Jr., c/o Amer. Presb. Mission Krebi, Cameroon, W. Afr1921
RETT, EGMONT Z., 3060 Larimer St., Denver, Colo.....1917
RHOADS, CHARLES J., 1914 S. Rittenhouse Sq., Philadelphia, Pa.....1895
RICE, Miss HELEN M., Holton Arms School, 2125 S. St., N. W., Washington D. C.....1920
RICE, JAMES HENRY, Jr., Brick House Plantation, Wiggins, S. C.....1910
RICE, WARD J., Roachdale, Ind.....1913
RICH, WALDO L., Box 221, Saratoga Springs, N. Y.....1921
RICHARDS, Miss HARRIET E., 36 Longwood Ave., Brookline, Mass...1900
RICHARDS, Miss RUTH, Clifton Sta., Fairfax Co., Va.....1921
RICHARDSON, FREDERICK S. W., Charles River, Mass.....1921
RICHARDSON, JENNESS, Zool. Mus. Univ. Minn., Minneapolis, Minn. 1920
RICHARDSON, W. D., 4215 Prairie Ave., Chicago, Ill.....1917
RICHARDSON, WYMAN 224 Beacon St., Boston, Mass.....1920
RIDGWAY, JOHN L., Mus. Hist., Sci. and Art, Los Angeles, Calif.....1890
RIES, DONALD T., 401 Thurston Ave., Ithaca, N. Y.....1920
RIIS, PAUL P., 301 Shaw St., Rockford, Ill.....1920
RIKER, CLARENCE B., 437 Scotland Road, South Orange, N. J.....1885
ROBB, WALLACE H., Congress Sq., Hotel, Portland, Me.....1921
ROBBINS, CHARLES A., Onset, Mass.....1914
ROBBINS, REGINALD C., Hamilton, Mass.....1921
ROBBINS, Mrs. REGINALD C., Hamilton, Mass.....1921
ROBERTS, PREWITT, Conway, Mo.....1919
ROBERTS, WILLIAM ELY, 207 McKinley Ave., Lansdowne, Pa.....1902
ROBERTSON, HOWARD, 157 S. Wilton Drive, Los Angeles, Calif.....1911
ROBERTSON, JOHN McB., Box 121, Buena Park, Orange Co., Calif...1920
ROBINSON, ANTHONY W., P. O. Box 426, Haverford, Pa.....1903
ROBINSON, Mrs. L. K., 1130 S. Franklin St., Denver, Colo.....1919
ROBINSON, Miss MARY L., 122 W. 33rd St., Kansas City, Mo.....1919
ROGERS, Miss MABEL F., 475 Lisgar St., Ottawa, Ontario, Canada..1921

ROGERS, Rev. WALLACE, 202 Third Ave., Rome, Ga.....1921
ROOSEVELT, FRANKLIN DELANO, Hyde Park, N. Y.....1896
ROSE, GEORGE C., Ellenville, N. Y.....1920
ROSE, RALPH H., South Kortright, N. Y.....1921
ROSS, GEO. H., 23 West St., Rutland, Vt.....1904
ROSS, Dr. LUCRETIUS H., 507 Main St., Bennington, Vt.....1912
ROTNOUR, A. B., 711 Park Ave., Ellwood City, Pa.....1921
ROUSH, GEO. HAROLD, 145 Beverly Ave., Morgantown, W. Va.....1919
ROWAN, Prof. WILLIAM, Univ. of Alberta, Edmonton, Alta.....1920
RUGG, HAROLD GODDARD, Dartmouth College, Hanover, N. H.....1919
RUST, HENRY J., Coeur d'Alene, Idaho.....1918
SACKETT, CLARENCE, Rye, N. Y.....1910
SAGE, HENRY M., Menands Road, Albany, N. Y.....1885
SAGE, Mrs. MARY SEARL, 1974 Broadway, New York, N. Y.....1919
SALYER, J. CLARK, 2412 Main St., Lexington, Mo.....1919
SAMPSON, Dr. JOHN A., 180 Washington Ave., Albany, N. Y.....1920
SAMPSON, Miss MYRA M., 7 Paradise Rd., Northampton, Mass.....1918
SANBORN, COLIN C., P. O. Box 55, Chicago, Ill.....1911
SANDERSON, Miss EVA E., 729 Dedham St., Newton Centre, Mass...1920
*SANFORD, Dr. LEONARD C., 216 Crown St., New Haven, Conn..... 1919
SANTENS, REMI H., Carnegie Museum, Pittsburgh, Pa.....1918
SATTERTHWAIT, Mrs. A. F., 118 Waverly Place, Webster Groves, Mo1920
SAUNDERS, Mrs. E. J., 122 N. Friends Ave., Whittier, Calif.....1921
SAVAGE, JAMES, 1097 Ellicott Sq., Buffalo, N. Y.....1895
SAVIN, WILLIAM M., 52 Broadway, N. Y.....1921
SAWYER, C. J., 22 Lincoln St., Hudson, Mass.....1920
SCHAEFFER, OSCAR FREDERICK, 669 Genesee St., Rochester, N. Y... 1916
SCHAFER, J. J., Port Bryon, Ill.....1918
SCHANTZ, ORPHEUS M., 1649, Otis Bldg., Cicero, Ill.....1919
SCHNEIDER, Mrs. ELIZABETH, 261 Broadway, Methuen, Mass.....1920
SCHNEIDER, Mrs. G. H., 4618 Kingswell Ave., Los Angeles, Calif....1921
SCHONNEGEL, JULIAN ELIOT, 92 Morningside Ave., New York, N. Y.1918
SCHORGER, A. W., 2021 Kendall Ave., Madison, Wis.....1913
SCHRENCK, Dr. HERMANN, Tower Grove and Flad Aves., St. Louis, Mo.....1919
SCHRODER, HUGO H., 303 E. State St., Bettendorf, Iowa.....1920
SCOTT, Miss JANET RUTH, Vassar College, Poughkeepsie, N. Y.....1921
SCOVILLE, SAMUEL, Jr.., 415 Lancaster Ave., Haverford, Pa..... 1916
SCUDDER, Dr. WALTER H., Litchfield, Medina Co., Ohio.....1920
SEELEY, GEORGE H., Box 106, Stockbridge, Mass.....1920
SERRILL, WILLIAM J., Haverford, Pa.....1916
SHA, ROY H., Apt. 38, 1321 Belmont St., N. W., Washington D. C..1920
SHARP, ARTHUR R., 99 Chauncy St., Boston, Mass.....1921
SHAW, HENRY S., 78 Cypress St., Newton Center, Mass.....1916
SHAW, Dr. J. E. NORTON, Mattapoisett, Mass.....1919

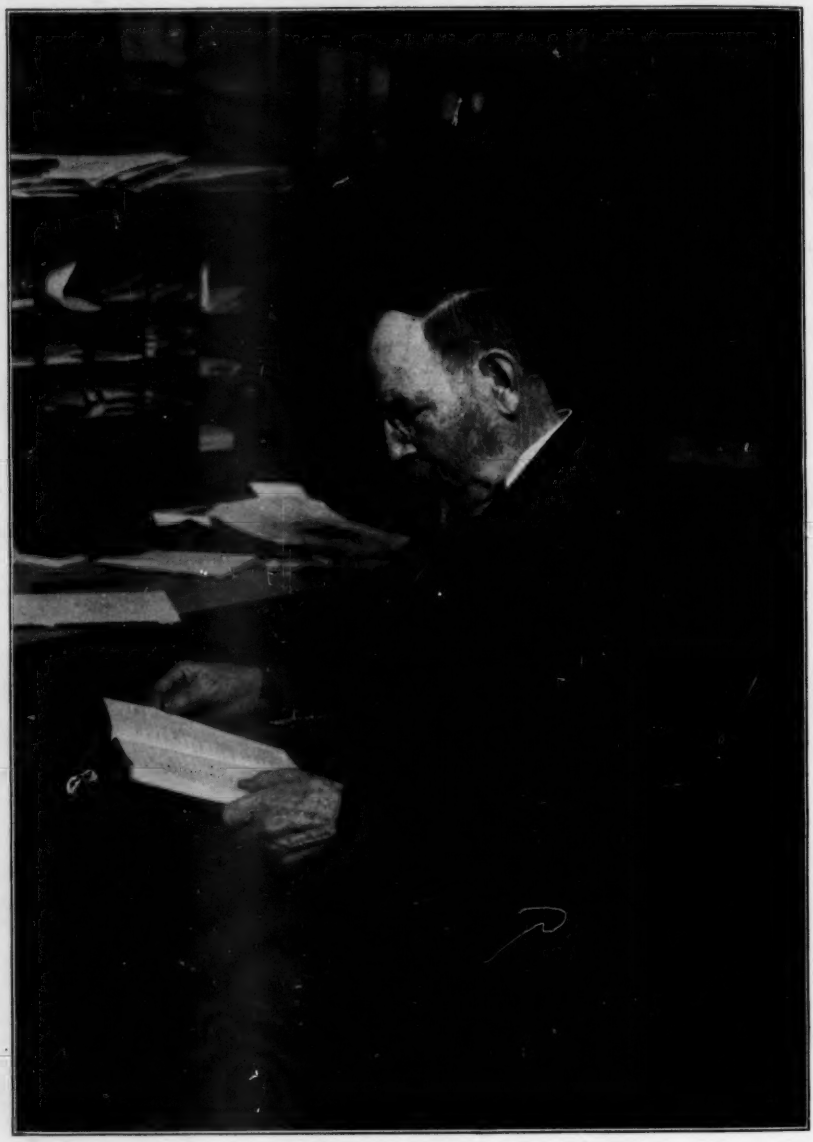
SHAW, WILLIAM T., 1000 Thatuna St., Pullman, Wash.....1908
SHEA, DANIEL W., Catholic Univ. of Amer., Washington, D. C.....1917
SHEAK, WLLIAM H., 154 N 21st St., Philadelphia, Pa.....1921
SHELDON, CHARLES, 3102 Q. St., N. W., Washington, D. C.....1911
SHELDON, H. H., Commercial Tr. Bank, Santa Barbara, Calif.....1919
SHELTON, ALFRED C., c/o Johnson, Shelton Co., Dayton, Ohio.....1911
SHERWOOD, ROBERT C., 38 Vassar St., Springfield, Mass.....1920
SHIRLEY, LESTER L., 144 Buntin St., Vincennes, Ind.....1917
SHIRLING, ALBERT E., 3849 E. 62nd St., Kansas City, Mo.....1919
SHOEMAKER, CLARENCE R., 3116 P St., Washington, D. C.....1910
SHOEMAKER, HENRY W., Room 1201, 71 Broadway, New York,.....1912
SHOFFNER, CHAS. P., 17 Rolling R'd, Springfield, Pa., (Rt. 3.) Media1915
SHROEDER, Mrs. A. P., White River S. Dak.....1920
SHUMWAY, FRANK R., 100 Brunswick St., Rochester, N. Y.....1920
SILLIMAN, O. P., Cor. Alisal & Riker Sts., Salinas, Calif.....1915
SIMONS, C. DEWAR III, Peacock Inn Annex., Princeton, N. J.....1920
SIMMONS, GEORGE FINLAY, Univ. of Texas, Austin, Tex.....1910
SKINNER, M. P., Yellowstone Park, Wyo.....1916
SLAWSON, Dr. EDW. DOUGLASS, 407 Center Ave., Bay City, Mich... 1921
SLEEPER, LAWRENCE, 198 St. Paul St., Brookline, Mass.....1920
SMITH, AUSTIN PAUL Apt. 412, San Jose, Costa Rica.....1911
SMITH, CHARLES E., 261 New Boston Road, Fall River, Mass.....1920
SMITH, Mrs. FLORENCE, Box 145, Cincinnatus, N. Y.....1920
SMITH, Rev. FRANCIS CURTIS, 820 Genesee St., Utica, N. Y.....1903
SMITH, Prof. FRANK, 1005 West California Ave., Urbana, Ill.....1909
SMITH, HENRY A. P., Digby, Nova Scotia, Canada.....1921
SMITH, HORACE G., 2918 Lafayette St., Denver, Colo.....1888
SMITH, Dr. HUGH M., 1209 M St., N. W., Washington, D. C.....1886
SMITH, JESSE L., 141 So. 2nd St., Highland Park, Ill.....1920
SMITH, LESTER W., 60 Cottage St., Meriden, Conn.....1916
SMITH, Miss LOTTIE M., R. F. D. Box 6, So. Sudbury, Mass.....1920
SMITH, NAPIER, Magog, Quebec, Canada.....1915
SMITH, THOMAS, 124 Howe St., Methuen, Mass.....1920
SMITH, Mrs. WALLIS C., 525 N. Mich. Ave., Saginaw, W. S., Mich...1916
SMITH, WENDELL PHILLIPS, Wells River, Vt.....1919
SMYTH, Prof. ELLISON A., Jr., Polytechnic Inst., Blacksburg, Va....1892
SMYTH, Prof. THOMAS, Hampden-Sidney Coll., Hampden-Sidney, Va.1921
SNYDER, LESTER L., Royal Ont. Mus., Toronto, Ont.....1919
SNYDER, WILL EDWIN, 309 DeClark St., Beaver Dam, Wis.....1895
SPEAR, H. M., 71 Octavia St., Belleville, Ontario.....1921
SPELMAN, HENRY M., 48 Brewster St., Cambridge, Mass.....1911
SPENCER, Miss C. S., Dept. of Zool., Coe College, Cedar Rapids, Ia..1917
SPERRY, CHARLES C., Biological Survey, Washington, D. C.....1920
SPIKER, CHARLES J., New Hampton, Iowa.....1921

SPRAGUE, ISAAC, Wellesley Hills, Mass....1920
STACKPOLE, FRED H., 120 Wellington Hill St., Mattapan, Mass....1920
STANWOOD, Miss CORDELIA JOHNSON, Ellsworth, Me....1909
STEELE, HENRY B., 4530 Drexel Boulevard, Chicago, Ill....1917
STEPHENSON, Mrs. JESSE, Monte Vista, Colo....1918
STEWART, J. B., Roselle, N. J....1921
STILES, EDGAR C., 345 Main St., West Haven, Conn....1907
STIMSON, Dr. ARTHUR M., 414 Raymond St., Chevy Chase, Md....1917
STODDARD, HERBERT L., Milwaukee Public Mus., Milwaukee, Wis...1912
STONE, Mrs., FRANCIS H., So. Dartmouth, Mass....1920
STONE, HARRY HERBERT, Jr., Sturbridge, Mass....1919
STONE, Mrs. WITMER, c/o. Acad. Nat. Sciences, Philadelphia, Pa....1920
STORER, TRACY IRWIN, Mus. Vert. Zoology, Berkeley, Calif....1916
STORROW, Mrs. JAMES J., Lincoln, Mass....1920
STRATTON, Mrs. GEORGE W., 439 Rebecca Ave., Wilkinsburg, Pa....1920
STREET, J. FLETCHER, Beverly, N. J....1908
STREIT, RAYMOND E., 66 Broadway, New York, N. Y....1921
STRONG, WM. DUNCAN, 2522 Ridge Road, Berkeley, Calif....1921
STRUTHERS, Prof. P. H., Univ. of Porto Rico, Mayagues, P.R....1921
STUART, FRANK A., 118 Green St., Marshall, Mich....1915
STUART, GEO. H., 3rd, 923 Clinton St., Philadelphia, Pa....1913
STURTEVANT, EDWARD, St. George's School, Newport, R. I....1896
SUGDEN, ARTHUR W., 35 Concord St., Hartford, Conn....1913
SUMNER, Mrs. GRAHAM, Linden Ave., Englewood, N. J....1920
SUTTON, GEO. MIKSCH, Carnegie Mus., Pittsburgh, Pa....1919
SWAIN, JOHN MERTON, 113 Main St., Farmington, Me....1899
SWEENEY, J. A., Forest Service, Nenzel, Neb....1916
SWEET, Miss ORA D., 34 Elizabeth St., Auburn, N. Y....1919
SWIFT, JOSEPH B., 46 Mattapan St., Boston, Mass....1920
SWOPE, Dr. EUGENE, Mt. Healthy, Cincinnati, Ohio....1921
TALBOT, L. R., 509 Audubon Road, Boston, Mass....1920
TATNALL, SAMUEL A., 503 Hansberry St., Philadelphia, Pa....1916
TAYLOR, ALEXANDER R., Coyce, S. C....1907
TAYLOR, HORACE, 131 Kent St., Brookline, Mass....1917
TAYLOR, LIONEL E., Bankhead, Kelowna, B. C....1913
TAYLOR, Dr. WALTER P., c. o. Scripps Institute, La Jolla, Calif....1916
TAYLOR, WARNER, 219 Clifford Court, Madison, Wis....1916
TEACHENOR, DIX, 510 Rialto Bldg., Kansas City, Mo....1919
TERRELL, CLYDE B., 83 Monument Sq., Oshkosh, Wis....1920
TERRILL, LEWIS McI., 44 Stanley Ave., St. Lambert, Quebec....1907
TERRY, Miss ALICE P., 89 State St., New Bedford, Mass....1920
TERRY, Dr. ROBERT J., 5315 Delmar Ave., St. Louis, Mo....1919
TEST, Dr. FRED'K C., 4620 Greenwood Ave., Chicago, Ill....1920
THABES, Mrs. J. A., 417 Holly St., Brainerd, Minn....1920
THOMAS, GERALD B., Box 1124, Billings, Mont....1919

THOMAS, JOHN G., Thos. Power Bldgs., 1200 Niagara St., Buffalo, N. Y. 1921
THOMPSON, J. W., 527 East First South St., Salt Lake City, Utah ... 1916
THOMPSON, STUART L., 529 Roxton Road, Toronto, Ontario 1921
THOWLESS, HERBERT L., 765 Broad St., Newark, N. J. 1919
TINDALL, CHAS. W., 912 N. Noland St., Independence, Mo 1919
TINKER, ALMERIN D., 519 Oswego St., Ann Arbor, Mich 1907
TIPPETTS, Mrs. KATHERINE B., Belmont Hotel, St. Petersburg, Fla .. 1921
TOLFREE, EDWARD R., 71 W. 11th St., New York, N. Y 1921
TOMLINSON, IRVING C., 1249 Little Bldg., Boston, Mass 1920
TOOTH, Mrs. OLLIE, Litchfield, Medina Co., Ohio 1921
TORREY, Miss EDITH E., 164 Huntington Ave., Boston, Mass 1920
TOWER, Mrs. KATE D., Hotel Bristol, Copley Sq., Boston, Mass 1908
TOWLE, WILLIAM M., 323 Pearl St., Burlington, Vt 1921
TOWNE, Dr. SOLON RODNEY, Sta. D., Route 2, Omaha, Neb 1919
TOWNSHEND, HENRY H., 35 Hellbourne Ave., New Haven, Conn 1915
TREGANZA, A. O., 522 S. 13th East St., Salt Lake City, Utah 1906
TROTTER, WILLIAM HENRY, 36 N. Front St., Philadelphia, Pa 1899
TRUESDELL, JOHN F., 230 Post Office Bldg., Denver, Colo 1918
TRUMBELL, J. H., Plainville, Conn 1907
TUDBURY, WARREN C., 1939 Marin Ave., Berkeley, Calif 1903
TUFTS, ROBIE W., Wolfville, Nova Scotia 1919
TULLOCK, Mrs. GILBERT 379 Edgewood Ave., New Haven, Conn 1919
TURNER, WARREN H., 16 Greendale Ave., Worcester, Mass 1920
TUTTLE, HENRY EMERSON, Groton School, Groton, Mass 1909
TUTTLE, Mrs. F. MAY, 1114 State St., Osage, Iowa 1920
TWITCHELL, A. H., Flat, Alaska 1918
TYLER, JOHN G., Box 173, Fresno, Calif 1912
UNDERDOWN, HENRY T., 401 Chestnut St., Philadelphia, Pa 1921
UNDERWOOD, WM. LYMAN, Mass. Inst. of Tech., Cambridge, Mass .. 1900
URNER, CHARLES A., 613 Cleveland Ave., Elizabeth, N. J 1920
VALENTINE, Miss ANNA J., Bellefonte, Pa 1905
*VANDERGRIFT, S. H., 311 Riggs Bldg., Washington, D. C 1918
VAN NAME, WILLARD G., Am. Mus. Nat. Hist., New York, N. Y 1900
VARICK, Dr. WM. REMSEN, 857 Elm St., Manchester, N. H 1920
VARS, HAROLD N., Box 81, Plainfield, Conn 1921
VETTER, Dr. CHARLES, 67 West 12th St., New York, N. Y 1898
VIERECK, HENRY L., Biological Survey, Washington, D. C 1916
VORHIES, Dr. CHAS. T., Univ. of Ariz., Tucson, Ariz 1918
WADSWORTH, CLARENCE S., 27 Washington St., Middletown, Conn .. 1906
*WALCOTT, FREDERICK C., 17 E. 42nd St., New York, N. Y 1921
WALKER, EDITH F., 614 County St., New Bedford, Mass 1920
WALKER, ERNEST P., Juneau, Alaska 1918
WALKER, GEO. R., R. D. 3, Murray, Utah 1909
WALLACE, CHAS. R., 69 Columbus Ave., Delaware, Ohio 1913

WALLACE, JAMES S., 12 Wellington St., E. Toronto, Ontario.....1907
WALTER, Dr. HERBERT E., 67 Oriole Ave., Providence, R. I.....1901
WALTERS, FRANK, 71, 40th St., Corona, Long Island, N. Y.....1902
WARD, FRANK H., 18 Grove Place, Rochester, N. Y.....1908
WARNER, EDWARD P., 1 Kennedy R'd., Cambridge, Mass.....1910
WATERMAN, Miss MARY E., Williamstown, Vt.....1921
WATERMAN, WILLARD H., Auburn, Me.....1920
WATSON, C. G., 201 Ridout St., S., London, Ont.....1919
WATSON, JAMES D., 6047 Harper Ave., Chicago, Ill.....1917
WATSON, LUCIUS H., 4123 Sheridan Blv'd, Lincoln, Neb.....1920
WEBER, J. A., Moore and Grand Aves., Leonia, N. J.....1907
WEBSTER, Dr. GEORGE A., Roxbury, Mass.....1916
WEBSTER, Mrs. JENNIE E. B., 44 E. 23rd St., New York, N. Y.....1917
WEEKS, Rev. LEROY TITUS, Emmetsburg, Iowa.....1918
WEGENER, Mrs. MIRIAM, 119 Waverly Place, Webster Groves, Mo.. 1921
WEISEMAN, T. WALTER, 226 Beaver Road, Emsworth, Pittsb'gh, Pa. 1919
WEISER, CHARLES S., 105 W. Springettsbury Ave., York, Pa.....1916
WELLS, Miss CAROLINE, 502 S. 4th St., W, Missoula, Mont.....1920
*WELLMAN, GORDON B., 46 Dover R'd., Wellesley, Mass.....1908
WEST, CHAS. SLADE, Marianna, Fla.....1919
WETMORE, Mrs. EDMUND H., Box 497, Babylon, N. Y.....1902
WEYGANDT, Dr. CORNELIUS, 6635 Wissahickon Ave., Philad'a, Pa...1907
WEYL, EDWARD S., 6506 Lincoln Drive, Mt. Airy, Phila., Pa.....1921
*WHARTON, WILLIAM P., Groton, Mass.....1907
WHEELER, Mrs. JAMES W., 403, 15th Ave., N., Seattle, Wash.....1918
WHITE, DONALD, 21 A, Sweetser St., Wakefield, Mass.....1920
WHITE, FRANCIS BEACH, St. Paul's School, Concord, N. H.....1891
WHITE, GEORGE R., 181 Wurtemberg St., Ottawa, Canada.....1903
WHITE, W. A., 158 Columbia Heights, Brooklyn, N. Y.....1902
WHITING, WILLARD C., 584 Plymouth St., E. Bridgewater, Mass.... 1920
WHITMAN, F. N., 2028 E. 100 St., Cleveland, Ohio.....1919
WHITNEY, GEOFFREY G., Highland St., Milton, Mass.....1920
WHITNEY, THOMAS H., Atlantic, Iowa.....1920
WHITNY, HOWARD, 45 East St., Hartford, Conn.....1921
WHITTLE, CHARLES L., 50 Congress St., Boston, Mass.....1916
WHITTLE, Mrs. H. G., 10 Chauncy St., Cambridge, Mass.....1920
WIEGMANN, Dr. WILLIAM HENRY, 436 E. 5th St., New York, N. Y..1916
*WIGGLESWORTH, Dr. EDW., Boston Soc. Nat. Hist., Boston, Mass.. 1920
WILBUR, ADDISON P., 60 Gibson St., Canandaigua, N. Y.....1895
WILCOX, T. FERDINAND, 118 E. 54th St., New York, N. Y.....1895
WILEY, Miss LENA CATHERINE, Buckland, Mass.....1918
WILLARD, BERTEL G., 51 Fresh Pond, P'kway, Cambridge, Mass....1906
WILLARD, FRANK C., Farmingdale, N. Y.....1909
WILLARD, OSCAR T., 1444 E. 54th St., Chicago, Ill.....1919
WILLCOX, Prof. M. A., 63 Oakwood Road, Newton, 60, Mass..... 1913

WILLIAMS, LEWIS B., 706 Citizens Bld'g, Cleveland, Ohio.....1920
WILLIAMS, LAIDLAW, 152 W. 57th St., New York, N. Y.....1919
WILLIAMS, ROBERT S., N. Y., Botanical Gardens, New York, N. Y..1888
WILLIAMSON, E. B., Bluffton, Ind.....1900
WILLIS, Mrs. HERBERT B., 425 Tremont St., Taunton, Mass.....1920
WILLWARTH, E. S., 11 Lincoln Hall, Trinity Court, Boston 17, Mass.1920
WILMOT, NELSON E., 40 Marshall St., West Haven, Conn.....1916
WILSON, Mrs. ETTA S., 9077 Clarendon Ave., Detroit, Mich.....1917
WILSON, GORDON, 1434 Chestnut St., Bowling Green, Ky.....1919
WING, DEWITT C., 5344 Dorchester Ave., Chicago, Ill.....1913
WINGARD, TODD ALBERT, 1173 Say Ave., Columbus, Ohio..... 1918
WISE, Miss HELEN D., 1930 18th St., N. W., Washington, D. C.....1919
WOLFE, PATRICK R., 6732 Honore St., Chicago, Ill.....1921
WOOD, Dr. GEORGE B., 1830 Spruce St., Philadelphia,, Pa.....1916
WOODMAN, Dr. WALTER, 14 Hubbard Park, Cambridge, Mass.....1920
WOODRUFF, FRANK M., Acad. of Sciences, Lincoln Park, Chicago, Ill..1894
WOODRUFF, LEWIS B., 14 E. 68th St., New York, N. Y.....1886
WOODWARD, Dr. LEMUEL, 52 Pearl St., Worcester, Mass.....1917
WOODWORTH, ROY C., 4615 Harrison St., Kansas City, Mo.....1908
WOOLMAN, Miss ANNA, 21 N. Highland Ave., Lansdowne, Pa.....1920
WORCESTER, Mrs. ALFRED J., 314 Bacon St., Waltham, Mass.....1908
WRIGHT, FRANK S., 14 Cayuga St., Auburn, N. Y.....1917
WRIGHT, Miss HARRIET H., 1637 Gratiot Ave., Saginaw, W. S., Mich1907
WRIGHT, Miss MARY A., 33 Kirkland St., Cambridge, Mass.....1920
WYMAN, Mrs. FRANCES L., Hubbardston, Mass.....1920
WYMAN, LUTHER E., 3965 Dalton Ave., Los Angeles, Calif.....1907
YOUNG, Rev. CHAS. JOHN, Brighton, Ont., Canada.....1918
YOUNG, FRANCIS E., Hanover, Mass., (R. F. D. Rockland).....1920
YOUNG, JOHN P., Ithaca, N. Y.....1911
ZIEGLER, G. FRED Jr., Greencastle, Pa.....1920
ZIMMER, J. T., Field Museum, Chicago, Ill.....1908
ZUCKERMAN, JOSEPH, Am. Mus. Nat. Hist., New York, N. Y.....1919
ZUTAVERN, LOUIS J., 2370 Forest Ave., Great Bend, Kas.....1921



PHOTOGRAPH FROM AMER. MUS. NAT. HIST., N. Y.

J. A. Allen

THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

VOL. XXXIX. JANUARY, 1922. No. 1

IN MEMORIAM: JOEL ASAPH ALLEN.[1]

BORN JULY 19, 1838—DIED AUGUST 29, 1921.

BY FRANK M. CHAPMAN.

Plate 1.

DR. JOEL ASAPH ALLEN, a Founder of the American Ornithologists' Union, died after a short illness at Cornwall-on-the-Hudson, New York, on August 29, 1921, in the eighty-fourth year of his life.

Five years before his death at the urgent solicitation of the President of the American Museum of Natural History, Dr. Allen consented to prepare a brief autobiography as an introduction to a bibliography of his scientific publications. This was published in November, 1916.[1] Only one familiar with Dr. Allen's retiring nature can realize the extreme reluctance with which he complied with President Osborn's request; but having set his hand to the task, he determined not to spare himself and with the thoroughness which marked all his work he prepared a history of his life and critical analysis of his dominant characteristic traits.

The value of this obviously authoritative document is so great

[1] Read before the thirty-ninth Meeting of the A. O. U. at Philadelphia, November 9, 1921.

[2] Autobiographical Notes and a Bibliography of the Scientific Publications of Joel Asaph Allen. 8vo. pp. xi + 215.

F. P.

that it is clearly not only the privilege but the duty of the biographer to use Dr. Allen's own words in recording the more intimate, personal side of the history of his life. Of especial interest is the account of his boyhood and the light it throws on the first manifestations of his inborn love of nature.

"I was born," Dr. Allen writes, "in Springfield, Massachusetts, July 19, 1838, the eldest son of Joel and Harriet (Trumbull) Allen, both of early New England stock. My father was a descendant in the seventh generation, of Samuel Allen who settled in Windsor, Connecticut, in 1640 . . . On the maternal side the descent is from John Trumbull, great-grandfather of Governor Jonathan Trumbull (said to have been the original of 'Brother Jonathan' and familiar friend of Washington) who was born in Newcastle-on-Tyne, and settled in Roxbury, Massachusetts, in 1639.

"My immediate progenitors were farmers. My father, however, learned the carpenter's trade and was a house-builder in his earlier days, but later bought a farm on which he spent the greater part of his life . . . My father had little appreciation for my natural history tastes, but was kind and generous, offering to share his farm with me if I would remain with him on the old homestead. My mother, on the other hand, was much in sympathy with my yearnings, and often used her influence in my favor."

Dr. Allen had a sister and three brothers. One of the latter died in infancy, a second became a moulder and the third a farmer. He therefore was the only member of his family to exhibit those traits which marked him as the born naturalist, and the possession of which are evidently not to be accounted for by direct inheritance, environment or association with others.

"My early training," Dr. Allen continues, "was rigidly puritanical. My parents were both members of the Congregational church, and strict in their religious observances. Family prayers invariably followed breakfast, and also closed the routine of Sunday, all the religious requirements of the day being strictly observed.

"My earliest recollections are naturally associated with the surroundings of my birthplace on the old farm, situated on a hill about a mile and a half east of the then thickly settled part of Springfield, known as the Watershops, where the United States

Government has for more than a century carried on the manufacture of firearms. The family home was a large two-story square-roofed house, at the time innocent of paint and unshaded by trees. One of the pleasantest memories of my younger days is of helping my father plant the row of maples and elms which long since became the prominent feature of the road frontage of the farm, and in recovering and painting the house. We were not crowded by neighbors, the nearest residence on the west being half a mile away, and there was only one house within half a mile to the eastward. Subsequently others much nearer were built in both directions, the lonely country road has become Allen Street, and a trolley car has been projected to connect the rapidly extending suburbs with the business portion of the city.

"Dandelions and daisies and other wild flowers were early attractions, the profuse gathering of which at an early age led my elders, and particularly my mother, to predict that when the toddling youngster grew up he would favor the profession of medicine, and I was often facetiously dubbed 'Dr. Sykes', in allusion to our then family physician, an herb-doctor of local reputation. In due time I was assigned a share in the household chores, and trained to preform the allotted tasks with promptness and care.

"The nearest schoolhouse was a mile distant, of the conventional red type, situated as usual on the crest of a hill. In summer the school was taught by a schoolmistress, while the winter session was conducted by a schoolmaster selected for his ability to keep the larger boys in order as well as to teach the 'three Rs.' Some years later a schoolmistress was employed for both winter and summer sessions. In those days the services of boys of even six and seven years were considered too valuable for farm-work to be sacrificed in summer for school purposes, so that to them only the winter session of the school year was available.

"Despite hard work and long hours, the farm proved attractive and satisfying for a time, but at about the age of fourteen the love inspired by this free contact with natural surroundings developed a desire to know more of the animal and plant life, the soil and the rocks, and the ever changing phenomena of sky and air, than could be gained merely by association.

"At the age of thirteen, after much pleading on my part, to my great delight, my father presented me with a gun. At first it merely afforded the pleasure all boys experience in being able to shoot something, either as game or on the pretext that certain birds and animals are destructive to crops, and that it is desirable to reduce their numbers. But very soon the destructive instinct gave place to a desire to possess specimens for study, particularly of birds, which I found were so numerous in kinds that comparatively few of them were known by name to any of the people, either of town or country, whom I met. Warblers, vireos, kinglets, sparrows and many other kinds of birds were shot, measured, weighed, described and given provisional names in my notebooks, so that I might again recognize them when met with, long before I knew that books had been written about them and that they all had names, Latin as well as English. I even made attempts to draw and color them, but entire lack of instruction in the work led only to failure and disappointment. A little later, however, I made the acquaintance of Bradford Horsford, a teacher of drawing, who was also an amateur ornithologist and taxidermist, with a good knowledge of all the commoner birds. From him I borrowed a copy of the Brewer edition of Wilson's 'American Ornithology,' which, to my unspeakable delight, he later sold to me; Nuttall's and Audubon's works on North American birds were also found in the public library of Springfield, and a new world was opened to me.

"A little later I made the acquaintance of a man of broader education than I had ever before met, who taught our district school for several winter terms, and became a resident of the neighborhood. As he was a nature-lover himself he could appreciate my aspirations, and most generously presented me with a copy of Blythe's 'Cuvier's Animal Kingdom,' a work of which I previously had never heard. Thus equipped, and with the resources of a public library now at my command, acquaintance with not only the local birds, mammals, reptiles and fishes, but with many of the insects, became a delightful experience. Interest in farm work as an occupation as rapidly declined, but a filial desire to share fully in the family burdens led to no neglect of duties but often to excessive effort in manual labor to demonstrate an interest otherwise unfelt."

During the winters of 1858–62, Dr. Allen attended Wilbraham Academy, working on his father's farm in the summer and devoting all his spare time to the study of such works on natural history as were available. "During this period," he states, "my ever present ambition was to write a history of the 'Birds of New England' that should be as complete and exhaustive as possible, and based on original observation, including the necessary explorations in northern New England where so many of the migratory species were supposed to pass the breeding season. Next to this I looked upon editorial work as an enviable goal. Yet at the time these aspirations began to develop composition was a slow and difficult task, and to acquire facility in writing I forced myself to keep a daily journal, in which I recorded not only the current weather conditions in detail but every incident of my daily experiences that seemed to offer a subject for comment . . . During the years 1859–1861, I collected and mounted (as attested by my catalogue, still extant) some 300 birds, representing nearly 100 species, and also such native mammals as I could find near my home, and I preserved in jars of alcohol specimens of all the reptiles, amphibians and fishes; such mollusks as were available were also gathered and several hundred insects. Best of all, I knew the technical names of nearly all except the insects, of which, however, I knew many. The local minerals and rocks found place on the shelves of my little museum, for which a small room was kindly provided by my parents, and which I equipped with shelves and a flat table case for insects. In addition there were rows of bottles containing the products of my boyish experiments with such cheap chemicals as I could afford to purchase at the neighboring drug store, each duly labeled with its proper chemical formula. The whole was amateurish in the extreme, and represented merely a superficial acquaintance with a wide range of subjects, but enough to add immensely to the pleasure of living, giving, as it did, the sense of being in touch with plant and animal life and the geological features of my immediate environment. My notebooks contained pages of descriptions of unusual atmospheric phenomena, from the prismatic tints of fleecy clouds floating past the midday sun, haloes, unusual storm conditions, auroral displays, and the August and November shooting-star

periods, to the varied forms of the snow crystals of a winter storm —things for the most part unobserved by my friends and neighbors, and which hence gave them no added joy to living.

"It is needless to say that my interest in every day practical affairs was limited to a conscientious and cheerful discharge of the obligations natural to my position as a helper to my father in the routine of farm work. Every spare moment of the day, when in the house, was spent in my room poring over books or specimens or jotting down things seen out of doors in the corn or hay field. These constant disappearances when off duty were naturally an annoyance to my father, who could not appreciate my absorption in such unpractical affairs. To the oft-made inquiry of my father, 'Where's Asaph?' was mother's gentle response, 'upstairs,' and the contemptuous paternal rejoinder: 'Upstairs; he's always upstairs.' Although unappreciative of his son's 'foolish notions,' he was not harsh or unkind, as an agreement, lasting for several seasons, granting one day a week for the prosecution of my hobbies is ample evidence. For these foibles my mother had always a degree of sympathy, which increased as years passed, to active influence in their behalf.

"To demonstrate my hearty interest in forwarding the farm work, I often, as I afterwards found, exerted myself beyond my proper physical endurance, which with the absorption in natural history work told heavily on my health. It was often necessary in the busy season for my father to employ day laborers and it was always my ambition to 'lead the field,' which I was always able to do except in the heavier work, even when a young boy just entering the teens. My evening task, before retiring, was to write in my journal the notes of the day and to change the dryers in my extemporized botanical press, consisting of several pieces of thick board, cut the proper length, a lot of old newspapers, and a heavy, smoothly waterworn stone for the top of the pile to afford the requisite pressure. Many, many a time this bedtime task found me almost too exhausted by the day's labor to accomplish. These long periods of overwork undoubtedly laid the foundation for much of the semi-invalidism of many later years."

In 1861 Dr. Allen reluctantly sold his beloved collections to Wilbraham Academy in order that he might raise funds to con-

tinue his studies at that institution, where he formed the friendship of William Harmon Niles, a student who was planning to enter the Lawrence Scientific School to study under Louis Agassiz. Niles induced Allen to join him and, with the balance of the sum received for his collections, he went to Cambridge in 1862. Thus was begun an association which, with some breaks due to ill-health or absence on expeditions was to last until 1885 when Dr. Allen left the Museum of Comparative Zoology to enter the American Museum of Natural History.

Dr. Allen continued his studies under Agassiz for the greater part of the succeeding three years and, on March 26, 1865, sailed with his great teacher as a member of an expedition to Brazil. They arrived at Rio Janeiro April 22, and after collecting in the vicinity of that city for some weeks, Dr. Allen was detailed to join a smaller party which left June 9 for the northern provinces of Brazil. After a difficult journey of somewhat over six months he reached Bahia. Although so far from well during this period that he was obliged to abandon the plan to reach the coast at Ceará, Dr. Allen's collections included several cases of birds, mammals, mollusks, and zoological specimens besides six or eight barrels of fishes, reptiles and other vertebrates in alcohol; and his notebooks contained many pages of detailed observations on the country through which he had passed, its flora and fauna.

On December 15, Dr. Allen sailed from Bahia on a 300 ton brigantine and after a trying voyage, during which they were blown from Cape Hatteras back to St. Thomas, they dropped anchor off Woods Hole, Massachusetts, 90 days out from Bahia.

Chronic indigestion now forced Dr. Allen to abandon museum work and return to the farm; but he had experienced the joy of exploration and as soon as his health permitted he took the field again, collecting in June, 1867, on Sodus Bay, Lake Ontario, and during the summer, in Illinois, Indiana and southern Michigan. At the end of this time he was physically so greatly improved that in October, 1867, he returned to the Museum of Comparative Zoology to act as Curator of birds and mammals in that institution.

After a year in the study, the winter of 1868–69 was devoted to zoological exploration on the headwaters of the St. John's river,

then a primeval part of Florida. This expedition supplied in part the material on which was based Dr. Allen's classic memoir 'On the Mammals and Winter Birds of East Florida, with an examination of certain assumed specific Characters in Birds and a Sketch of the Bird-Faunae of Eastern North America.' This paper, published as a Bulletin of the Museum of Comparative Zoology in 1871, at once placed Dr. Allen in the first rank of philosophic naturalists.

The results of the Florida expedition having been reported upon, Dr. Allen started, in April, 1871, on a nine months' collecting trip to the great Plains and Rocky Mountains in the interests of the Cambridge Museum. General collections were made at intervals from the Missouri River to the Great Salt Lake, the selection of locality being largely dependent upon the movements of hostile Indians. At Fort Hays, Kansas, the arrival of a military escort being delayed, Dr. Allen and his two assistants went buffalo hunting, accompanied by only a single hunter, securing and preparing in eight days, of which thirty-six hours were occupied in traveling, fourteen complete skeletons and several additional skulls representing both sexes and various ages, from yearlings to old bulls and cows, also the skins as well as skeletons of five young calves. This collection was supplemented the following January by the skins of eight buffalo in winter pelage.

July and part of August were passed in Colorado, where *Leucosticte australis* was discovered on the summit of Mount Lincoln, and after ten days at Cheyenne, Dr. Allen went to Oregon, Utah, which became his base for the ensuing seven weeks. In October he worked at Green River and Fort Fred Steele, and from October 20 to December 18 at Percy. Here he secured the assistance of two native hunters and the collections, chiefly of big game, shipped from this point nearly filled a freight car. December 19 he started eastward and after a short stop in Kansas to secure buffalo he reached Cambridge on January 22, 1872. The collection made on this expedition included 200 skins, 60 skeletons and 240 additional skulls of mammals (mostly large species); 1500 birds' skins, over 100 birds in alcohol, a large number of birds' nests and eggs,recent and fossil fishes, mollusks, insects and crustaceans.

The following year Dr. Allen, representing both the Cambridge

Museum and the Smithsonian Institution, again went to our western frontier on this occasion as chief of the scientific staff attached to the survey of the Northern Pacific Railroad. Railhead on this road was then at Fargo, North Dakota, beyond which construction trains ran as far as Bismarck.

The work of the expedition lay in the country between Bismarck and a point on the Mussellshell River about fifty miles northwest of Pompey's Pillar on the Yellowstone, a distance of about 550 miles. The journey occupied some three months from June 20.

The region was infested by actively hostile Indians who had so interfered with the survey for the railroad route that an escort of 1400 troops under General Custer accompanied the expedition. It was only three years later that this officer and his entire command were killed some sixty miles south of the most western point reached by Dr. Allen.

After passing the mouth of the Powder River, the expedition was in daily contact with Indians, and twice was attacked in force. Orders were given forbidding the naturalists to use firearms or to leave the line of march, and Dr. Allen writes, "The opportunities for natural history collecting and field research on this expedition were far from ideal," but some specimens and much valuable data were secured which later formed the basis of a report of some sixty pages. With the exception of a visit to Colorado with William Brewster, in 1882, made chiefly to regain his greatly impaired health, Dr. Allen did not again enter the field. His collecting days, therefore, were ended before those of most of his colleagues were well under way, and few who knew him only in the study realized the extent of his travels, the dangers on sea and land to which he had been exposed, and the amount of material he had secured. The present day naturalist, who travels in palatial steamers or follows well-worn trails, has but faint conception of the discomforts of a 90-day voyage in a small sailing vessel, and has perhaps never experienced the risk of being himself collected.

From 1876 to 1882 Dr. Allen gave his time wholly to research, producing his monographs on the 'American Bison Living and Extinct' and 'North American Pinnipeds,' the latter a volume of 800 pages. The intensity with which he applied himself to these

and other tasks during this period overtaxed his always limited reserve powers and for long periods he was able to do little or no work.

When the trustees of the American Museum, under the presidency of Morris K. Jesup, decided to make research as well as exhibition the function of that institution, their choice naturally fell upon Dr. Allen as the head of the department of birds and mammals, a post which Dr. Allen entered on May 1, 1885.

This was the beginning of a new period in his life as well as that of the museum. Although the museum's exhibition halls had a fair representation of the leading types of birds and mammals, there was no study collection of the latter, and only about 3000 study specimens of the former. The 50,000 skins and skulls of mammals at present in the museum were all, therefore, acquired during the period of Dr. Allen's curatorship, and, to him in large measure is due the size and importance of the study collection of birds. Two years after Dr. Allen came to the museum the Lawrence Collection of 12,000 specimens was purchased and this was followed by the Herbert Smith Collection of 4000 birds from southwestern Brazil, the Scott Collection from Arizona, and the collections of Arizona birds presented by Dr. E. A. Mearns, and of Hummingbirds by D. G. Elliot. At this time also the invaluable ornithological library of Dr. Elliot was acquired. The first three years of his connection with the museum, Dr. Allen worked alone, but on March 1, 1888, the writer was appointed his assistant and today the combined staffs of the now separate departments of birds and mammals number seventeen.

Relieved now of the actual care of the growing collections, Dr. Allen devoted himself to their study, and the publications of the Museum during the succeeding third of a century bear testimony to his industry and productiveness. During this period he published 37 papers on birds and 150 on mammals, based wholly or largely on museum material. To his duties as Curator were soon added those of Editor, a post which his natural qualifications and experience especially fitted him to occupy. For thirty-two years all the zoological publications of the Museum, including 37 volumes of the Bulletin and 22 of the Memiors, passed through his hands and a regrettably large part of his time was consumed by the preparation of copy for the press and the reading of proof.

Dr. Allen was eagerly welcomed to New York by the resident naturalists of the city, and he was at once placed on the Council of the Academy of Sciences, and later was made President of the Linnaean Society, but he soon found that the duties of each day demanded all his strength and he was able to take only a small part in the scientific activities of the city. He, however, was one of the organizers of the original Audubon Society and to the end was an active director of this society and its virtual successor in New York, the National Association of Audubon Societies. But by far the greater part of the time Dr. Allen could spare from his curatorial labors was given to the American Ornithologists' Union in the welfare of which he was as much concerned as a father in the well-being of his first-born. Indeed to Dr. Allen might well be applied the title Father of the American Ornithologists' Union. He played a leading part in its organization, served as its President during the first seven years of its existence, and was a member of its Council until the day of his death. He edited three volumes of the Union's 'Check-List' of North American Birds, and for 28 years was editor of its official organ 'The Auk', during which period he contributed 643 papers, reviews and obituary notices to that publication.

Only one in daily contact with Dr. Allen can realize the extent of the demands upon his time and strength made by his duties for the Union, and the loving attention he gave to its affairs. It occupied a place in his affections second only to that held by members of his family and he never spared himself in advancing its aims.

Dr. Allen was chiefly responsible for the formulation of the Union's 'Code of Nomenclature,' a subject in which he took a deep interest and on which he was an authority. For years he served as Chairman of the Union's Committee on Classification and Nomenclature, and for the last ten years of his life he was a member of the Commission on Zoological Nomenclature of the International Congress of Zoology.

In 1879, after five years of wedded life, Dr. Allen's first wife, Mary Manning Cleveland, of Cambridge, died leaving him his only child, Cleveland Allen, now in business in New York City.

Seven years later, and a year after coming to the American Museum, Dr. Allen married Susan Augusta Taft, of Cornwall-on-

Hudson, who survives him. "I owe to her deep love and sympathy," Dr. Allen writes, "to her supreme optimism and constant watchfulness over my health, and to her inspiration, the greater part of the little I may have achieved in these last thirty years and doubtless many years of activity beyond those I otherwise would have attained."

Dr. Allen's distinguishing characteristics as a man were, modesty, sincerity, unselfishness, gentleness, consideration for others, a purity of mind and purpose which made it difficult for him to believe that anyone was not actuated by the same direct, guileless motives which ever animated him. I do not recall ever hearing him speak ill of another, but he was unsparing in his condemnation of careless work, and particularly of generalizations based on insufficient data. But so impersonal was his attitude, so impossible was it for him to cherish resentment, that while for an author he would show only helpful consideration, for his work, honesty would compel him to be merciless. I have seen him treat with fatherly kindness a man whose theories he had subjected to fatally destructive criticism.

As a student Dr. Allen was inspired by love of truth for truth's sake and by an intense absorbing interest in his work. His powers of application and concentration were phenomenal; his enthusiasm for research so unlimited that he constantly overtaxed his physical resources and the end of the day often found him on the verge of complete exhaustion. But so vitalizing was his love for his profession that, in spite of a frail physique, and the fact that he never rested from his labors when it was a possible thing to pursue them, he was actively engaged in research to within a few weeks of his death.

But he was never too absorbed in his work to be interested in that of others; an appeal to him for advice or assistance received his whole-hearted attention and he made your problem his. The writer owes him a debt which accumulated during thirty-four years of almost daily association. Coming to the museum in March, 1888, as an inexperienced assistant, he found in Dr. Allen not only a friend but a teacher to whom he might turn for instruction in even the most trivial matters with the assurance that he would meet with a sympathetic response. Dr. Allen's counsel was

always based on a logical consideration of the facts at issue; for as far as was humanly possible, he eliminated the personal equation in reaching conclusions.

The inestimable privilege of securing Dr. Allen's advice was sought, therefore, not only by members of his staff, but by workers in other departments of the museum and in other institutions. On one occasion Prof. W. B. Scott, the eminent palaeontologist, came to him for an opinion on the skull of a recent fossil rodent. Dr. Allen, who remembered characteristics of quadrupeds far better than he did those of biped mammals, mistook Scott for Theodore Roosevelt, and only after expressing to me his surprise at his caller's profound knowledge of his subject did he discover that he had made an error in identification.

In spite of the physical limitations from which he suffered, and by which he was handicapped, it is impossible to consider Dr. Allen's career without feeling that few men have more nearly and more happily approached the full measure of their potential achievements.

The guiding star which rose on his youthful horizon shone brightly almost to the day of his death, and he followed it with ever increasing joy and confidence. Only a few weeks before his last illness, as he was exulting over the possibilities of the early receipt of large collections from the field, he said "I am just as enthusiastic as ever."

To the boy under the spell of the romance of a naturalist's life I commend these lines written by Dr. Allen as he approached his eightieth year: "All I aspired to was opportunity for scientific research, believing that diligence, singleness of purpose, and honest work would bring its own reward. I was content to follow my own lines of dominating interest to such limit as the circumstances of earning a living would permit. I have never had any desire for money as such, nor any interest whatever in financial projects, nor any longing for honors beyond those my colleagues in science saw fit to impose."

And with the passing years these honors came to him from every quarter of the globe. Harvard gave him the Humboldt scholarship, the University of Indiana the degree of Doctor of Philosophy, the Boston Society of Natural History, the Walker

Grand Prize, the Linnaean Society of New York its medal. He was elected a member of the National Academy of Sciences in 1876, an Honorary Member of the New York Zoological Society in 1887, an Honorary Fellow of the Zoological Society of London in 1901, and an Honorary Member of the British Ornithologists' Union in 1907, to mention only a few of the institutions on whose rolls his name appeared. And so far was he from realizing his own worth, that always, he writes, such recognition came to him as a "surprise."

And so in the fulness of his years and powers, honored by his colleagues, beloved by his associates, Dr. Allen's life came to its end. For more than three score years and ten he had dedicated himself to the study of nature and he has left to the world the fruits of his labors, a marvellous record of achievement, and an inspiring example of pure, unselfish devotion to the cause of science.

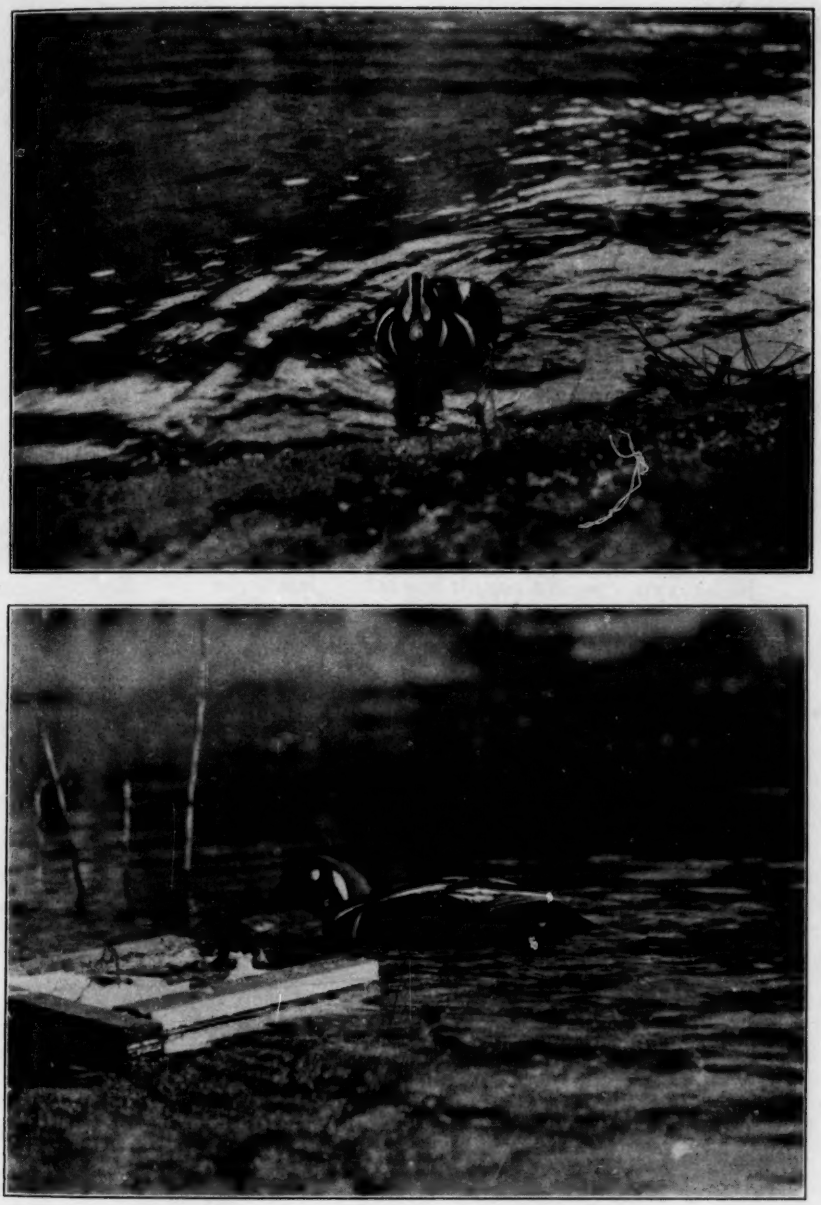
AN ADVENTURE WITH A PAIR OF HARLEQUIN DUCKS IN THE YOSEMITE VALLEY.

BY CHARLES W. MICHAEL AND ENID MICHAEL.

Plates II–III.

In the Yosemite Valley, during the early spring of 1921, we had the pleasure of intimate and friendly association with the rare and little known Harlequin Duck. Although these birds have long been suspected of nesting in the mountains of California, eggs have never been taken within the confines of the State. Therefore, it was with eagerness that we searched for their nest. The search proved unsuccessful. However, we did get a great deal of pleasure in studying the habits of the birds.

The Harlequins were first noted April 6. From this date until May 10 they were daily visitors at our camp on the edge of the Merced River, where a floating lunch counter was maintained for their especial benefit. The following paragraphs, taken from notes written at the time of observation, may bring out some new points regarding the habits of these birds.



HARLEQUIN DUCKS ON THE MERCED RIVER, YOSEMITE VALLEY, CALIFORNIA

April 7, 1921.—We were about to cross Sentinel Bridge at 1 P. M., when, just above the bridge, we saw a pair of Harlequin Ducks. They were swimming close together and bobbing their heads most energetically. Suddenly the male Harlequin gripped the back of the female's head with his bill and pushed her completely under the water and hopped onto her back. Coition then took place. In fifteen seconds the female was free and flew under the bridge, closely followed by the male. She landed not fifty feet from where she left the water and immediately commenced to dive. The male swam about endeavoring to approach, but on being spurned he too began to dive.

After about three quarters of an hour of feeding the birds swam under the bridge and up the river for about fifty yards. Here they stopped to bathe. With a rapid movement of body and wings they beat the water through their feathers. At times one wing was used to throw the water over the body, at other times both wings were used.

The bath was apparently ended and the male eagerly approached the female, uttering a high, rapidly repeated call. At his close approach the female either dove or wildly beat the water with her wings. This maneuver was repeated several times. After about thirty minutes spent at the bath the birds climbed upon a boulder at the river's edge and prepared to rest. However, their rest was interrupted. Somewhere in the valley a blast was set off and at the sound, as if impelled by one motion, both birds dropped head first into the river, soon to reappear and swim up stream.

A few minutes later they appeared in front of our camp, a hundred yards up stream. Bread was thrown on the water and they ate with great enjoyment, sucking at the large pieces, after the manner of a feeding swan, and swallowing the small pieces.

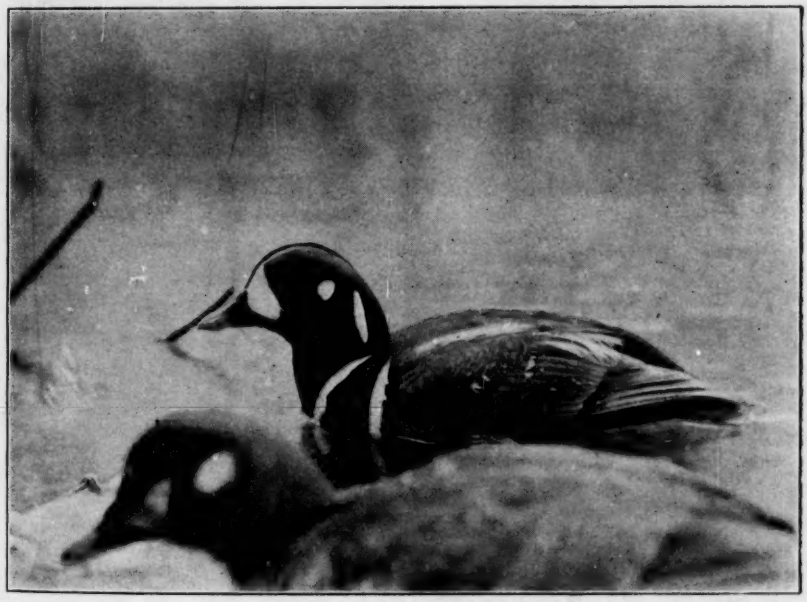
April 11, 1921.—The Harlequin Ducks came again today. When first seen they were swimming down the river a short distance above camp. As usual the female was in the lead, closely followed by the male. They came at once to the floating lunch counter at the edge of the sandy beach. While the female ate the water-soaked bread the male rested on the water a foot away, slowly paddling his feet and quietly waiting his turn without the least sign of impatience.

Before the female had eaten her fill I walked slowly to the shore and set up the Kodak, on a stand which had been previously arranged. As I approached the birds moved up stream about fifteen feet. In a moment the Kodak was adjusted and I retired out of sight. In less than a minute both birds were back, and the female was eating. When they were in about the right focus the string was pulled and the shutter of the Kodak went off with a snap. At the click of the trigger both birds looked up, but neither showed the least alarm.

Desiring to make other exposures, and fearing lest the birds might satisfy their appetites and leave, I again approached. The birds behaved as before. This preformance was repeated four times. After the second exposure I waited for the female to finish her meal and then the male came to the bread tray. The female was neither attentive to her mate nor considerate. When she was through eating she drifted down stream with not so much as a glance at her handsome companion. While floating a few feet off shore she dipped her bill into the water a number of times. After each dip she raised her head and appeared to swallow. In this manner she washed down her food and then decided to have another mouthful. She came again to the bread and deliberately shoved the male out of her way. She ate calmly, in contrast to the hurried and nervous manner of the male. He gulped his food in awkward haste as if in constant fear of being deserted by his mate.

In spite of the interruptions both birds were through eating in fifteen minutes. Perhaps, the male could have eaten more, but the female was moving up stream and he hurried away to catch her. He moved rapidly against the swift current and was soon in his accustomed position, a few inches in rear of the female. As the birds moved across the water they dipped their bills under the surface in the manner of Shoveller Ducks. However, I am inclined to think that they were drinking rather than feeding.

Just before the birds reached their favorite perch on a partly submerged log they dipped their bodies under the surface of the water several times. Each time they came up they struck their wings against the water, making a great splash. Finally they raised their bodies above the water and flapped their wings vigor-



HARLEQUIN DUCKS ON THE MERCED RIVER, YOSEMITE VALLEY, CALIFORNIA.

ously. A thorough bath they had and then they climbed onto a perch a few inches above the water. While the ducks were sitting on the log a Kingfisher came rattling down stream and alighted on a dead branch ten feet above their heads. Both birds raised their heads and looked up but neither appeared excited nor alarmed.

The birds took turns sleeping. When sleeping they turn their heads half around and rest their bills on their backs. All the while the male was dozing the nictitating membrane over his eye kept flashing like a tiny electric light. These eye-winkings took place about twice every second. When the male awoke the female took a nap. They spent forty minutes here and then a fisherman came down the river-bank and they were frightened away. They swam the swift current to the opposite shore, worked their way up stream, recrossed and drifted down to the feeding station, for another meal. It was just one hour since they last ate. As before the female ate first and the male waited patiently. After this meal they did not bathe, but moved up stream a few yards and stepped out on a root to preen their feathers. Twenty minutes later they were in the water again. This time they drifted past the lunch counter and when they reached the swift riffle below camp the female dove twice. The male waited on the surface for her to reappear and then they went down stream a short distance and disappeared in the dense strand of bare willow shoots.

When the birds appeared in front of camp on the morning of April 12 they were acting strangely. Apparently they were making love. They were bobbing and bowing to one another, swirling around, touching their bills together and uttering little chatty sounds. One of the moves on the female's part was to slowly submerge her body until just her head and neck appeared above the surface of the water—a bold invitation, on her part, for attention. In spite of the wanton actions of the female the love-making failed to reach the climax. When the ceremony was over the birds moved in close to the shore and slowly worked their way up stream, diving every few minutes as they moved. along About two hundred yards up stream they climbed out on a log and rested a few minutes. They preened their feathers but did not sleep. For the first time the male was seen to act first. He slipped into the water and spoke quietly to his mate, as if to coax her into the

water. However, she refused to be coaxed so he climbed back onto the log again. Two minutes later, without any apparent conversation, the birds left the perch and started up stream. On this occasion, and subsequently on many other occasions, we followed the birds along the stream, studying their habits when feeding under natural conditions. The waters of the Merced River are very clear and we could easily follow the movements of the birds, even to a depth of six feet.

Harlequins are expert swimmers and divers. They dive and swim under water with all ease of a grebe, besides possessing the ability of the Water Ouzel to walk about on the river bed against the swift currents. When feeding, so far as we were able to observe, they show no preference as to depth of water. When working up stream along the shore they wade in the shallow water, prying among the stones. Where the water is deeper they tip up in the manner of Mallard ducks, and where the water is still deeper they dive. They dive in water a foot deep and they dive in water six feet deep, always going down where there is a gravelly bottom. Most often they stay under water not more than fifteen seconds. Often they stay down twenty seconds and occasionally they remain under the water as long as twenty-five seconds. To leave the surface of the water they use their wiry tails as a spring to make the plunge and as they go down both wings and feet are used as a medium of propulsion. When once on the gravelly bottom the wings are closed, the head is held low, and the progress is made against the current, as they walk along poking amongst the stones. When coming to the surface they float up like bubbles, without movement of wings or feet. Their bills break the water and their bodies pop suddenly onto the surface where they rest a moment. While poising on the surface between plunges their bodies float high. When earnestly feeding seldom more that ten seconds elapse between plunges. The birds seldom dive simultaneously. The female usually acts first.

At times the Harlequins choose the swiftest riffles and when feeding there, their method is the same as when in the less joyous waters. They apparently dive from any position with equal ease, but always as they go down they turn up stream and even in the swiftest currents they come up in about the same spot at which

they went down. When feeding in these racing waters they merely hesitate on the surface and four or five dives are made in rapid succession. Such work as this is strenuous, but the birds are quite at home in the swiftest currents, and when tired from their exertions they swing into an eddy behind some snag or boulder and rest as they bob about on the surface.

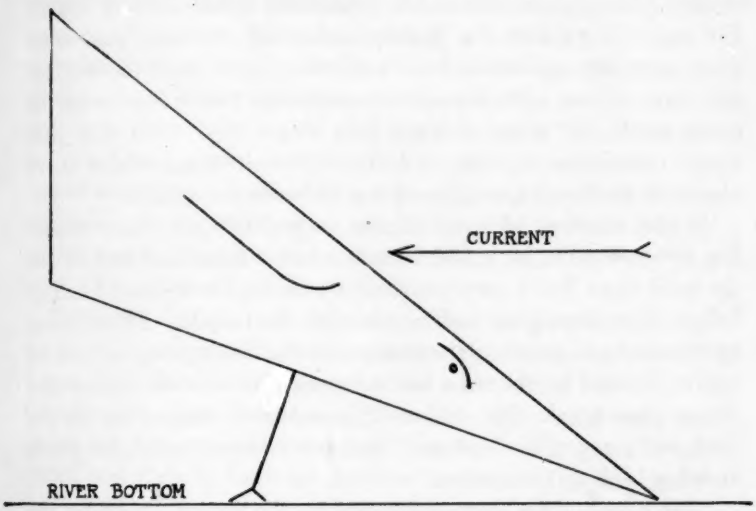


FIG. 1.

The diagram (Fig. 1) shows the method of the Harlequin Duck when feeding under water. The head is held down by physical strength. The current against the angle of body throws pressure on the feet and enables the bird to maintain its position without swimming. Where the current comes with just the right speed the bird may stand still, but in lesser currents the bird must move forward.

The female Harlequin has a large appetite and a wide range in the choice of food. She will eat cooked potatoes, macaroni, meat, raisins and bread. She gets all of these things at the lunch counter and then often pays a visit to the place where the vegetable parings are dumped. She has been seen to eat raw potato peelings. The male never eats so much as the female. He may have the appetite,

but he is so polite that he always waits for the female to finish eating before he starts and then he must gulp his food lest the female desert him while feeding.

Bread, potatoes or other foods taken from the tray were always thoroughly mashed and water soaked before being swallowed. Feeding under natural conditions the bulk of their food probably consists of aquatic insects and it is doubtful if fish are ever taken. Not once did we note the Harlequins feeding on roots, grasses or other growing vegetation; nor were they ever seen to swallow any large object. On certain occasions the female has eaten as many as six full slices of bread in a single day. One slice just about constitutes a meal. Of the different things which were placed on the floating tray bread was the most acceptable.

On the morning of April 22 the male Harlequin came alone. For two weeks the birds had been constant companions and to see the male alone was a surprise; almost a shock, for we could easily believe that something had happened to the female. Flying from up stream he alighted on the water near the feeding tray and as he moved forward he uttered a new note and his voice was louder and clearer than usual. He ate but little and then stepped out on the bank and preened his feathers. In a few minutes he left his perch and flew back up the stream.

After a hasty breakfast we hurried up the river looking for the birds, hoping if they were nesting that we might get an idea of where to look for the nest. Nothing was seen of them until twelve o'clock when the pair was seen flying down stream. We were a mile from camp and when we got back the food tray was empty and both birds were sitting on the bank. They spent most of the afternoon in the vicinity of camp. At six-thirty they had their last meal and then left together, flying up stream.

On the wing the Harlequins are strong and swift, and although they fly with rapid wing beatings they fly silently. In flight they remind one of the Scoters, but they rise more gracefully from the water. There is no splashing of water when they rise and in a few swift wing beats they have caught their stride and are going at full speed. Often in the evening after the last meal of the day they left so silently that we did not hear them go. Their arrivals in the morning were different. There would be the sudden splash

to announce their presence and if the food tray happened to be empty the clear calling voice of the male was soon heard. On one occasion we heard his call but did not answer promptly. When we came out of the tent he was coasting down stream a hundred yards or more away. We called to him and he arose at once from the water and flew back up stream to receive the crumbs that were tossed on the water. While we sat on the bank tossing bits of cake the Harlequin, by paddling his feet, held his position on the river and waited for the food to drift down. He seldom took the food as it came but waited for it to pass on the current and then with a quick turn he would pick it up eating as he drifted a foot or two down stream. He seemed unable to swallow any large object and when a crust of bread came his way he either let it pass or took it in his bill and thoroughly mashed it while holding it under water. Small crumbs that could be taken into the mouth with water seemed to please him most.

From the day the male first came alone the birds were not seen so much together. The male spent much time in the vicinity of camp, but the female was not often seen during the day. She usually came late in the day, however, and would come flying down the river, alight at the food tray, eat a hearty meal, bathe, preen and then fly back up the river at dusk. The male knew of her habits and would be awaiting her arrival. He always became much excited when she arrived and would give her an enthusiastic reception. The female acted differently and would seldom meet his advances with any show of pleasure.

On the evening of April 26 the female refused to have anything to do with the male. She sat on the bank preening her feathers when the male came flying up the river and alighted with a splash some fifteen feet away. He bobbed and bowed, he turned and swayed, and dipped his head under the water, all the while speaking in a low voice. His actions brought no response from the female except that she crouched lower and dipped her bill into the water and remained motionless as if attempting to hide. Finally, after five or six minutes, the male gave up in disgust, swung into the current and sailed off down the river. The female left soon after, going up stream. She was heavy with food, having eaten there slices of bread, and rose from the water with all the grace of a Coot, flapping both wings and feet.

From the day of the first estrangement the female was not seen below camp. Most of her time was spent somewhere up stream. Usually she came to the feeding tray towards evening, but there were a few days when she failed to come at all. When she came in the evening she was always very hungry and would eat two or three slices of bread to satisfy her appetite. After one of these hearty meals she would bathe thoroughly and then climb onto a perch and preen, before flying away up stream. If the male was not about when she arrived he usually put in his appearance before she left. Most often he tried to force his attentions upon her, but occasionally he seemed quite satisfied to linger near and act as guard while the female ate or preened. On these occasions there was much conversation carried on in a low tone of voice, with the male doing most of the talking. If given any encouragement at all the male would leave with his mate when she flew up stream. We had no way of telling how long the birds stayed together. However, they did separate, for the male always appeared alone in the mornings.

When alone the male is timid and hesitates to come to the tray if any one is in sight. Also it has been observed since the birds separated that the male feeds mostly on the surface and seldom dives as he does when the female is about to set example. He has frequently been observed to paddle slowly on the water with his bill held just beneath the surface. His mandibles are kept in constant motion in the manner of feeding Shoveller ducks.

Our experiences with the Harlequins came to an end on the afternoon of May 9. We were in the tent when we heard the loud clear call-note of the male bird. When we got to the river-bank both birds were coming down stream. The female came and ate at the feeding tray while the male stood guard a few feet away. After eating the female worked along the edge of the stream among the stones and roots. The male kept close to her, alert and nervous all the while uttering his low chatty notes, his sole idea being apparently to guard the female. The female ate again at the tray, bathed and dove a number of times and then both birds started to drift down stream on the swift current. When about one hundred yards below camp they rose from the water and flew down stream. They were last seen going under the Sentinel Bridge.

Chief Ranger Forest Townsley reports that a pair of Harlequin Ducks have visited the Yosemite for a number of years. We hope to see them again next year and to have another try for their nest. Last year we noted a lone female as late as July 28.

From the available literature on the subject one might get the impression that Harlequin Ducks are silent birds. However, this was not the case with the particular pair which we had under observation. When the birds were together the male carried on a low, chatty conversation much of the time. The female was more or less silent, and appeared only to speak when she wished to chide her mate. Besides these chatty notes the male had another call, which he uttered in moments of excitement, or when he wished to attract attention. This was a loud, clear "qua, qua, qua," uttered in rapid succession. Occasionally just a single note was uttered which was particularly loud and clear. The low notes might remind one of the conversational notes of the Coot, but the loud call was quite distinctive and could not be compared with the notes of other water birds with which we are familiar.

Yosemite, Calif.

A MYRTLE WARBLER INVASION.

BY CHARLES L. WHITTLE.

FROM February 21, 1920 to March 4, 1920, my wife and I spent the entire daylight time bird cruising about Savannah, Georgia, and Beaufort, Walterboro and Charleston, South Carolina. In addition, several excursions were made for ten or twenty miles south and east of Walterboro. With the exception of February 21 and March 4, the temperature was considerably below the normal for this section of the State and the season was correspondingly late. In fact official reports of the U. S. Weather Bureau for the entire month of February, 1920, show a subnormal average temperature, not only for South Carolina as a whole but for

Georgia and Florida as well. The averages and departures therefrom as a whole were:

		Average Temperature	Departure From Normal.
February, 1920	South Carolina	42.8	—4.10
	Georgia	46.0	—1.40
	Florida	57.1	—2.90

The averages and deficiences of coast stations from Charleston to Key West, Florida, during this period were as follows:

		Average Temperature	Departure From Normal.
February, 1920	Charleston, S. C.	48.2	—3.50
	Savannah, Georgia	49.5	—3.00
	Jacksonville, Fla.	53.9	—3.00
	Miami, Fla.	64.2	—4.00
	Key West, Fla.	68.2	—2.60

Between February 21 and March 3, Myrtle Warblers (*Dendroica coronata*) were met with every day as single individuals, as groups of two or three, or forming part of a band of other birds such as Ruby-crowned and Golden-crowned Kinglets, Carolina Chickadees, White-eyed Vireos, American Goldfinches, Pine, Palm and Yellow-Palm Warblers, Tufted Titmice, etc.

There was no evidence so far as we could detect that plans were underway among the Myrtle Warblers to begin their northward migration; and even the customary movements north and south among migrating species generally, due to alternating unseasonably warm or cold weather, was not apparent as the temperature remained so persistently subnormal during this period, not only in the territory under observation, but, as shown above, throughout Georgia and Florida. The principal evidence that the nesting season was approaching was a slight brightening of the plumage due to an increase in the distinctness of the yellow patches on the sides of the breasts of some of the Myrtle Warblers. Flocks of these birds even ten in number, were nowhere met with during this time, and this was true also of the South Carolina coast region where the Cumbahee River enters the tidal marshes southwest of Charleston, as late as March 2.

On March 3, we journeyed from Walterboro to Charleston, S. C., this city lying about thirty miles a little south of east of the former town; and on the following day we crossed Charleston harbor and went by trolley to the southwest end of Long Island which is locally known as the Isle of Palms. This island is merely a sand bar, about due east of Charleston, with the ocean on one side and an extensive salt marsh on the other. Many dunes occur here and these and the intervening hollows are covered in large part with dense thickets of a composite growth, but wax myrtle, so common a mile to the southwest, is practically absent.

We left the car at nine o'clock. The day was fair. A gentle easterly breeze was blowing and for the first time for twelve days the weather was distinctly summer-like, the thermometer on the street in Charleston at two o'clock registering 70 degrees.

Birds generally were not plentiful in the shrubbery, but overhead, flying northeast up the coast, were many flocks of small birds. Some flocks flying high could only be detected by the feeble calls of the birds, but other flocks were moving only a little above the land and could be identified as Myrtle Warblers by their call note. All flocks viewed at short range were seen to be composed entirely of this species. During our stay here of an hour there was a steady succession of warbler flocks flying up the coast, but only an occasional bird sought the shrubbery for rest or food.

A broad tidal stream separates the southwest end of Long Island from Sullivan Island, which is a similar sand bar trending in the same direction, and forming practically a continuation of the former island. The complex chaparral of Long Island disappears almost completely upon crossing the tidal stream and a miniature forest of wax myrtle trees (*Myrica cerifera*) takes its place, while the sand dunes become much less pronounced. Here a great change in the behavior of the birds was observable. Myrtle Warblers swarmed everywhere feeding at times but working up the coast slowly. There were warblers on the outer beach close to the water; on the shingle beaches and on their accompanying patches of seaweed. Every shrub and tree had one or more birds searching for myrtle berries of which there were scarcely any in this immediate vicinity. They alighted on and flew beneath the piers of the oyster fishermen; clambered over piles of oyster shells;

searched the inside and outside of fishing boats lying on the shore; inspected the chimneys and the sides of the fishermen's houses; looked over the weather-beaten fences and visited the marshes, a veritable host of inquisitive and, I believe, hungry birds bound for the North and feeding as they went and in this army there was no other kind of bird whatever.

As a rule the growth of their nuptial plumage was insufficiently advanced readily to identify the sexes. All the birds still wore their winter coats. As far as could be detected without the bird in the hand, there was no other indication of their summer plumage except that the yellow patch opposite the bend of the wing appeared slightly more apparent than during midwinter.

Perhaps half a mile from the northeast end of Sullivan Island the belt of wax myrtle trees narrows to a width, measured northwest and southeast, of about three hundred feet. Here, near a seashore resort, a road had been recently cut across the belt of wax myrtle trees at right angles to the sand bar. Streams of warblers flying along the shore northeasterly from Folly and Morris Islands, just south of the entrance to Charleston harbor, dropped to the land and converged at the southwest end of the mantle of myrtle trees and passed across the open swath cut for the new road. Posting ourselves here we counted the birds moving northeast, minute by minute as they passed the opening, for half an hour. The flight was continuous, many of the birds lighting on the ground and trees from time to time, and the number crossing per minute varied from twenty to two hundred, and accordingly averaged about one hundred per minute. As far as we could judge the number was no greater than it had been all the time since our arrival at the shore. Taking, therfore, the average at one hundred per minute, 24,000 Myrtle Warblers passed northward between nine in the morning and one in the afternoon. Not only so, but additional warblers passed close by both to the east and to the west of the stream of birds under observation. No doubt also the migration began prior to nine in the morning and did not cease at one in the afternoon. The line of migration passed directly across Charleston harbor entrance, there being no tendency for the birds to follow the shore line of the deep harbor reëntrant. This course is mentioned because it is believed to be a practice fol-

lowed quite generally as the birds move northeast and helps to explain certain anomalous dates of arrival at northern stations during the spring migration,

Where did all these warblers come from, and in what manner did so large a concentration take place? Is it customary for Myrtle Warblers to migrate northward earlier along the Atlantic seacoast than close by in the interior, as was the case on March 4, 1920, and, if so, how far in terms of date of arrival does such migration keep in advance of interior-moving birds? My own observations west and southwest of Charleston, above cited, make it fairly certain that the winter home of the warblers lay either in Florida or in some or all of the countries comprising the most southern portion of their range. I have been unable to find any published record of Myrtle Warblers, wintering in the United States, assembling in this manner and I have never before observed them in large numbers migrating northward without admixtures of other species of warblers or members of other families.

Published records show that late in February and early March Myrtle Warblers in numbers begin to arrive from tropical countries at Alligator Reef and Sombrero Key lighthouses in Florida; but among reports to me for the current year (1920) from lighthouse keepers at Sombrero Key, Dry Tortugas, American Shoal and Sand Key, only at the last mentioned station were any migrating birds of any kind observed prior to March 4, 1920. At Sand Key light-house, however, the keeper, Mr. C. G. Johnson, reports that the "Migration began on the night of February 8, when a great many land birds," referred to as "warblers and sparrows," passed the light. Mr. Johnson reports other large flocks of small birds passing this light going northward on February 13, 17, 24, 27, and on March 1. The movement on February 8, 13, and 27, and March 1, took place at night and on February 17 and 24, during daylight. Accurate information as to the names of the species of warblers composing these flocks is unfortunately lacking, but the arrivals noted correspond fairly closely in the matter of time with prior flights which are known to have included many Myrtle Warblers. That most of the warblers arriving in Florida from across the Gulf of Mexico at this season of the year may be safely regarded as of this species receives additional support from the

fact that the records show that but one or two other species of warblers reach Florida from the Tropics before March 1, and these in small numbers only. My own observations in Georgia and South Carolina during February and March, 1920, and throughout the peninsular portion of Florida during the corresponding period for several previous years, indirectly furnish probable if not confirmatory support of the contention that the assembling of such a multitude of Myrtle Warblers, wintering in these states, if of actual occurrence, is an unusual phenomenon. Summed up, the evidence tends to substantiate the view that among the birds from across the Gulf of Mexico arriving in Florida during the twenty-five days immediately prior to March 4, 1920, there were many Myrtle Warblers.

It thus appears reasonably certain that the greater part of this army of warblers arrived in southern Florida from Cuba, Jamaica or Central America during February and March, accompanied by few or no other species of warblers, in a succession of smaller flights. If I were to view this matter from my own experience, the island of Cuba would have to be excluded as a possible source, for during November and part of December, 1917, I was much afield in Havana, Santa Clara and Oriente Provinces and my notes make no mention of seeing a single Myrtle Warbler among the thirteen species of warblers found there. In Florida insect food in sufficient variety and abundance awaited their coming, the birds, however, probably worked northward along the east coast to the first area of wax myrtle, bearing fruit in quantity. Here the concentration observed is believed to have taken place because here their favorite vegetable food occurred in such abundance as to satisfy their needs. The supply of berries becoming exhausted at this locality, the birds again moved northward until a like area was encountered, the route taken being the main belt of myrtle bushes which closely follows the outer sand bars and sea beaches along northeastern Florida. The vegetable food supply thus influenced their migration speed, and its distribution determined the route followed; and this migration thus far north in Florida was in the main independent of local temperature excepting that on warm days like the fourth of March, coming after a period of unusually cool weather for the time of the year, the northward movement would no doubt be temporarily accelerated.

Along the entire coast of eastern Florida, part of Georgia, most of South Carolina, nearly the entire coasts of North Carolina, and Virginia, Maryland and Delaware, all of New Jersey (bordering the ocean) to Sandy Hook, the south shore of Long Island and much of Massachusetts to Maine, outer sand bars occur, separated from the mainland by narrow bodies of shallow water or salt marshes. These sand bars are often intersected by great arms of the sea like Chesapeake, Delaware and New York Bays. Many estuaries open through them, such as Port Royal Sound and Savannah Harbor. From eastern central Florida north to Maryland, following this long line of sand bars, two species of Myrica, bearing wax-covered seeds, reach their maximum development; and, as one goes inland, they decrease rapidly and practically disappear a short distance from the ocean or as high land is reached. The northern species (*M. carolinensis*) occurs along the entire coast from Nova Scotia to Florida and the southern form (*M. cerifera*) ranges from southern New Jersey south to Florida, along the Gulf coast to Texas and up the Mississippi valley to Arkansas. It is believed that the adherence of the early, tropically-wintering Myrtle Warblers to this seaside belt of Myrica, with its accompanying food supply, aided perhaps by the greater average warmth of this belt during such migration as compared with interior regions having the same latitude and much higher elevation, accounts for their arrival at certain places in New Brunswick and Prince Edward Island, near the coast, earlier than at more inland points well to the southwest, and it appears to be more than a coincidence that the northern limit of *Myrica carolinensis* is found in these two northern provinces where, in the case of Prince Edward Island, Myrtle Warblers on the average arrive April 26, thirteen days ahead of eleven other species of warblers, and nearly a week earlier than at certain Pennsylvania stations, below referred to, 600 miles to the southwest. Thus these birds are reported by W. W. Cooke (see Bulletin No. 18, U. S. Biological Survey, pp. 62 and 63) as arriving in New Brunswick a week earlier than at Philadelphia and Renovo, Pa., and at certain places in New Jersey (not specified). Philadelphia is located on the Delaware River just above sea level, about seventy-five miles from the ocean end of Delaware Bay, and fifty miles from the eastern coastal sand bars

along the New Jersey coast followed by the early migrants. Renovo lies on the Susquehanna River still further inland on the north side of the Appalachian Range and at a considerable elevation. It is reasonable to believe that the birds so reported reach these interior stations as part of the general, mixed, inland warbler movement of a later date. The state of New York affords a similar set of conditions by which to test this belief and fortunately fairly conclusive data bearing on the matter have been assembled by Eaton (see Birds of New York, Part 1, "County Schedules" tabulations). Eaton shows by the testimony of competent observers that this species reaches northern, central and western New York several days later than it is reported at nearly all coastal stations in this state.[1]

Mention has been made of the fact that the warblers moving northeast on March 4, did not follow the sinuosities of the shore line into Charleston harbor but cut straight across its entrance to other sand bars lying to the northward, and it is believed that this practice is adhered to all the way up the coast, at least as far as New England, the birds moving similarly across the entrance to other like waterways such as Chesapeake Bay, Delaware Bay (thus failing to reach Philadelphia seventy-five miles to the north) and the big reëntrant south and east of New York City, from Sandy Hook in New Jersey to the western end of Long Island, where they first appear from April 1 to 10. Staten Island, which lies at the extreme western end of Lower New York Bay, is passed by, the earliest date recorded for spring migrants here being April 22 (see Eaton's County Schedules referred to above).

The Atlantic seaboard is well known to be a wide and favorite route followed more or less closely by many species of birds in

[1] There is one exception noted. Two observers furnished the migration notes from Tioga county and the "County Schedules" give two dates, March 30, as the earliest date and April 28 as the average date of first arrivals of Myrtle Warblers. Tioga county is one of an east and west tier of counties, forming the southern boundary of the state, adjoining Pennsylvania. The earliest dates for first arrivals in the counties adjoining Tioga county are April 23 (Broome county), April 24 (Chemung county), and April 10 to April 29 for the remaining counties. It is thus seen that March 30 is a very exceptional date for this section of the state and extremely local. I have been unable to secure full particulars of the occurrence of this warbler in Tioga county on March 30 or the year or years the observations were made. Wintering birds on Long Island may well have accidentally wandered there or have been blown westward by a powerful easterly wind.

their spring and fall migrations. During March an extremely narrow portion of this zone, namely the belt of sand bars lying next the ocean, appears to constitute an early migration highway for Myrtle Warblers (independent of interior migrating birds) which have wintered in the Tropics.

If it be true that these warblers came from tropical winter quarters, then the migrating instinct, no doubt preceded by physiological changes, developed earlier among birds that wintered under conditions of great humidity and high temperature than among those wintering in the cooler United States; and I have given temperature conditions during February for the three southern Atlantic states with comments on the behavior of the Myrtle Warblers wintering in Georgia and South Carolina to emphasize this fact and to contrast the absence of any observable migrating tendency among these birds wintering even thirty miles from the ocean near Charleston at a time when a host of the same species was moving by them northward along the coast.

10 Chauncy St., Cambridge, Mass.

PROBLEMS OF FIELD IDENTIFICATION.[1]

BY LUDLOW GRISCOM.

AT a meeting of the Linnaean Society of New York when a school boy, I reported having seen a Bicknell's Thrush, my indentification being based on the erroneous supposition that its call-note was diagnostic. The resultant storm of criticism rendered me practically speechless. Then and there I planned to do my best to become a reliable observer and to investigate the scientific possibilities of sight identifications. So little did I have to say at that Linnaean Society meeting that my credibility was entirely eliminated, and for over two years nothing I reported was given any credence or entered in the proceedings. In the years that

[1] Read before the thirty-ninth Meeting of the A. O. U. at Philadelphia November 10, 1921.

have passed no event hurt more or was more beneficial. I can claim, then, a full understanding of and sympathy for the amateur bird student and his point of view. Recently I have been forced at times into the position of judging or criticising other people's records. This has given me the opportunity of learning the point of view of the trained naturalist, who is responsible for the scientific accuracy of what he publishes.

It is a waste of time to discuss the importance and necessity of sight identifications when it comes to studying habits, life-histories, migration, and local or detailed distribution. Here where we are dealing with the usual and the average, the normal rather than the exceptional, one record can check another. The cumulative value of the data collected under these heads by amateur students all over the country is too well known and obvious to require elaboration. Yet before I pass on to my main theme I should like to express my own sense of indebtedness to these bird lovers, who make no claim to being scientific ornithologists, but without whom our knowledge of American birds could not have reached its present development. My reason for wishing to make this acknowledgment of their assistance as full and complete as possible is that I am going to attempt to show that, by the very nature of the laws of evidence, this same help cannot be extended by the amateur observer to so great an extent in the determination of the abnormal and exceptional. The failure to recognize this distinction is, I believe, the cause of the only point of friction that disturbs the good relations between the professional and amateur in our subject; for the only phase that presents any real difficulty to harassed editors, or which causes hard feelings in the bosom of the amateur, is when an unprofessional or untrained observer reports the occurrence of rare, unusual or accidental birds in some local area, and it becomes incumbent upon the reviewer to determine the scientific value of this testimony. Just how difficult and disagreeable a task this can be is, perhaps, only known to those who have experienced it, and who receive angry or insulting letters.

What birds *can* be satisfactorily identified in the field? When is a sight record of scientific value?

It is to be noticed that these are two distinct questions. The first can be answered by considering only the diagnostic characters

of the bird, the second involves also the characteristics of the observer. To take a specific parallel from another field, our first question asks whether typhoid or measles can be identified without killing the patient and performing an autopsy. The second asks under what conditions a diagnosis of these diseases shall be taken as establishing their presence as a scientific fact.

Let us take these two questions in order, considering first the possibilities in sight identification. They are very much greater than many people suppose, greater I believe, than even many professional ornithologists believe, if they have not specialized in field observation. To the beginner sparrows look pretty much alike, but the Vesper is picked out by having white outer tail-feathers. No one who knows all the sparrows well bothers to identify a Vesper sparrow in this way. The pattern of its back is distinctive, and the color effect of the side of the head is diagnostic. Comparatively few people in identifying a Jay need to see its crest or its blue color. In fact bird-books mention only the most conspicuous characters of our birds.

I have drawn up for consideration two lists, one of birds which it is practically impossible to distinguish in life, the second of birds which trained field ornithologists find very difficult to distinguish satisfactorily. These lists represent not only my own opinion but also the opinions of trained field ornithologists with whom I have had the privilege of association in the field. The territory included is the eastern United States. Accidental visitants and subspecies are omitted from consideration, but this does not mean that they are of necessity unidentifiable.

The list of practically impossible birds follows:—Immature Forster's, Arctic, and Common Terns; females of the two Widgeon and the two Golden-eyes; the two Scaups; immature American and King Eiders; males of the larger species of *Accipiter* compared with females of the sm ller species; non-breeding Alder and Acadian Flycatchers; immature Blackpoll and Baybreasted Warblers. These are birds for which I have never been able to discover a reliable diagnostic field character.

With the exceptions above noted, in my opinion it is *possible* to identify every species of bird in the Eastern United States in life in any of its plumages. By "possible" is meant that the bird in

question possesses a character of color, size, or voice which is observable under such conditions of light, proximity, or direct comparison as the particular case may require. It follows, therefore, that a possible identification might be very difficult but never wholly improbable. The list of birds that unquestionably belong in the very difficult class follows:—Immature Parasitic and Long-tailed Jaegers; Ring-billed Gull; adult Forster's, Arctic, and Common Terns; adults of the two Cormorants; female and immature American and Red-breasted Mergansers; female Ring necked Ducks; Snowy Egret and immature Little Blue Heron; the immature Night Herons; Semipalmated and Western Sandpipers; the two Yellowlegs; immature *Buteos*; breeding Alder and Acadian Flycatchers; Fish Crow in midsummer; Bronzed Grackle; the Sharp-tailed Sparrows.

As a general principle these birds can only be identified by trained ornithologists under very favorable circumstances. In any locality where they would be rare or casual, they should be automatically transferred to list 1. To avoid argument it may be stated that a bird is listed as difficult to identify if the diagnostic character is only occasionally noticeable. Thus the Alder Flycatcher is easy to identify if it sings, but as a migrant it usually does not. The Ring-billed Gull is easy to identify if you see the color of its legs, but usually you cannot get near enough. As neither of these events is wholly improbable, identifying either species is a perfectly good possibility. In birds of list 1, however, it is wholly improbable that a sufficiently near approach to see the diagnostic character could possibly be made. It is also obvious that the more inexpert the observer, the more birds become difficult to identify.

With this brief discussion of the possibilities in sight identification we can turn to our second question, a much less popular theme. To mention two minor points first. The notes of the Starling require us to be more careful in listing as heard certain native species which it mimics. Mute Swans having become feral in several sections of the New York region, renders all Swans unidentifiable except under most improbable circumstances, and in this connection I see that the Mute Swans on the Hudson River near Staatsburg have finally burst into print in the last 'Auk,' as Whistling Swans

though such an identification has been successfully suppressed on several occasions.

With the exceptions already noted it may be confidently asserted that all so-called difficulties or inaccuracies of identification and the doubting of records by ornithologists are due to the defects of the individual student and not the bird. These defects are divisible into four catagories.

(a) Physical defects of eye and ear.

(b) Natural inaptitude for the study. The best illustration of what I mean by this is a woman who was constantly seeing the Prothonotary Warbler in Central Park in New York City without gaining credence. Even after this strikingly attired Warbler had actually occurred in the Park, and she had seen the genuine article daily for a week, she pointed out a female Scarlet Tanager and a Yellow-throated Vireo on two subsequent occasions as Prothonotary Warblers.

(c) Mental attitude of the observer. By this I mean, in part, list-crazy enthusiasts, whose one idea is to get as large a daily, monthly, or yearly list as possible, and whose greatest happiness is to add some rare or casual visitant to their list. As this attitude is neither ornithological nor scientific, their observations are unavoidably open to suspicion.

(d) Ignorance and lack of study. This is by far the most important and wide-spread defect. It causes 99 per cent. of the misidentifications of bird-students, and is responsible for 99 per cent. of the difficulty which professional ornithologists have in that most unwelcome task, judging the sight records of others. No one can be blamed for physical defects or natural inaptitude for a given subject, and it would be absurd narrow-mindedness to expect every one interested in birds to have a scientific attitude of mind, but if the student wants to make scientific records by sight identification, ignorance of his subject and an unscientific mental attitude cannot possibly be condoned, and will render such records liable to suspicion. A recent illustration of this may serve to clarify the principle involved. The Willet is by no means rare on Long Island in fall, but is excessively rare in spring. A very enthusiastic bird-student called me up, and mentioned as a very fine find a Willet seen in August. "Of course," said he, "the Willet is a

regular spring migrant, but I never saw one in the fall before." When asked for his spring observations, he said he would have to look them up, as they had not made much impression on his mind. In spite of the fact that the Willet is one of the easiest shore-birds to identify correctly, the committee now preparing a New York local avifuana would, naturally, be entirely unjustified in foisting such records on the literature of ornithology, and it would surprise me if any one but the observer himself would disapprove of this ruling.

Enough has already been said under limitations to indicate that the difficulty in judging sight records lies almost entirely in the human equation. "Lack of study" is a purely relative matter, and knowledge of a subject can vary from 0 to 100 per cent. The principle underlying the whole question is roughly as follows. The correctness of a sight identification rests upon the unsupported testimony of the observer and is an opinion of his. The weight of this opinion cannot have a higher percentage rating, than his knowledge of the subject has to complete knowledge. That is, if he only knows 80 per cent. of the facts bearing on the particular case, his opinion cannot possibly have a weight greater than 80 per cent. This is merely applying to ornithology the rule of logic that any conclusion is worth only what the facts on which it is based are worth. Except under very exceptional circumstances an opinion must be worth approximately 100 per cent to be of definite scientific value, and the "human equation" reduced as near to zero as possible. The scope of an exact science is increased by facts, not by probabilities. The only factor modifying this principle is what may be termed the relative identifiability of the bird. An adult male Scarlet Tanager, a Pelican, or a Chicken are so easily identified that the "human equation" is automatically greatly reduced and the value of the opinion greatly increased. The more difficult the identification of the bird, the more the "human equation" counts.

Perhaps it might interest many bird students to take up the point of view of the scientist, who has to pass on the validity of sight records, and see what he has got to have in the way of information to solve this problem of the "human equation." Let us return to our simile of the doctor. You have a severe pain in

your insides, the doctor arrives and listens to your symptoms. Suppose he is quite non-plussed, never heard of such symptoms before, goes home, scrabbles through the standard medical works to learn how to tell symptoms of colic and appendicitis apart, and writes you confidently a day or two later that he has looked your symptoms up in all the text-books, that you undoubtedly have appendicitis and must be operated on immediately. If in addition he has no particular reputation as a diagnostician, and you discover that he never even graduated from a medical school you would not value his opinion, and you would most assuredly get another doctor. This story may serve to indicate some of the principles involved. The patient has a clear right to select his physician, to accept or reject the treatment. The editor or ornithological critic has not only a right but a duty to judge every sight record and his accepting one will be the result of exactly the same factors in principle, as the patient uses in trusting to a physician's diagnosis.

The scientific ornithologist must, therefore, ask himself an obvious question with regard to any sight record:—

What is the reputation of the observer for knowledge of the subject? This does not necessarily involve personal acquaintance with the observer. If he is known to be a trained field ornithologist the question is practically settled, the sight record will be accepted. If he has no reputation and is really entitled to one, he has only himself to blame. If he is not entitled to a reputation, it is his duty to pass satisfactorily on one or more of the following questions:—

(1) Is the observer thoroughly familiar with the birds of his locality? Was he aware of the importance of his observation?

(2) Did he ever see the bird before?

(3) Does he know the species with which it could be confused?

(4) Does his account show that the circumstances of the observation were thoroughly satisfactory?

(5) Did he recognize the bird at once, or did he have to look it up later?

Surely any fair-minded person could take no exception to the natural reasonableness of these questions. There is nothing harsh or hypercritical about them. It is equally obvious that as

more of them are satisfactorily answered, the value and probability of the identification steadily increase. It is also equally fair that if *none* of these questions is answered satisfactorily, the record should be rejected. As the ornithologist is responsible for the accuracy of what he publishes, it is *absolutely necessary* for him to reject any sight record of a bird known to be difficult to distinguish unless *every one* of these questions can be satisfactorily answered. And yet it is no exaggeration to state that the majority of records submitted for consideration do not afford the wretched editor a definite answer to a single one of these questions. Not only this, but an effort on the part of the editor to obtain answers to these questions frequently gives offense, and the written report of the observation frequently contains in itself an unfavorable answer to one or more of these questions. It is undoubtedly true that many valid observations are rejected annually, because the observer entirely fails to report them properly. His wrath at the editor could more appropriately be turned against himself. Again many bird-students have an idea that the record of the trained field ornithologist is readily accepted because his "word is good," and are annoyed that their "word is not good." This is absolutely incorrect. The record of the trained field ornithologist is almost invariably written up more carefully and more conscientiously than that of any other observer, he does not value "his word" at two cents, and the editor can answer every one of his questions favorably.

Failure to understand the reasonableness and justice of these questions which the editor asks himself, is proof positive that the mental attitude of the student is wrong, and that it is unscientific, which must always render his records liable to suspicion and subject to careful scrutiny. While on this subject I append in the form of little maxims, some other points founded on personal experience, which are indicative of an unscientific mental attitude. They do not apply to all bird students by any means, and are intended to be constructive rather than critical.

(1) Do not fail to recognize that the professional ornithologist knows more about the subject than you do.

(2) Do not tell a critic that you have studied birds for twenty-five years. You have not and he knows it. You have been interested in birds for twenty-five years, but you have studied them in a part of your spare time only.

(3) Do not try to argue yourself into a reputation as an expert. It is a matter of fact, not of argument. The professional must also be allowed some time to find it out. He has no psychic powers.

(4) Remember that the true ornithologist is pleased when another recruit joins the ranks. If he doubts your record, it is not because he is trying to down you, or to get rid of a dangerous rival.

(5) Unfavorable criticism, even if occasionally undeserved, is one of the best incentives to learning a subject well. The more you dislike it, the more likely you will be to take the steps necessary to make its repetition impossible. Merely getting hurt or sore will not help at all. If you are persistent, it will not discourage you. If you are not persistent, you cannot possibly become a trained field ornithologist anyhow.

The foregoing discussion has attempted to answer the question: "When is a sight record of scientific value?" If it is granted that the "human equation" is the chief difficulty involved, the fairness of the questions which the ornithologist, as editor or critic, asks himself about any given record, must also be granted. Of these it is obvious that the reputation of the observer for being a trained field ornithologist is the most important. If the bird student really wishes to make observations of scientific value, he must needs become a trained field ornithologist. Granted no physical defects and some aptitude for the study, this is well within the reach of anyone. Like every other art, it requires skill and knowledge, only to be attained by practice and study. This study should, of course, follow along definite lines, and I would suggest the following as necessary qualifications.

(1) First and most important, the student should learn *by heart* the published information on the birds of his locality. He should be able to give his "local list" from memory, and should know the status and seasonal occurrence of each species. This will teach him what to expect, and he will immediately recognize the abnormal or the unusual as such. If there be no published information, he should study the published information of all the territory adjacent to his.

(2) Next, commit the diagnostic characters of every species in the local list to memory. Get a mental image of what is to be

seen. Colored plates of practically every species of bird in North America are available to all. If possible, a museum should be visited and bird-skins examined. This is the best way of acquiring a clear mental picture.

(3) Next, get out in the field and learn to know the birds of your locality well. The length of time this will take is naturally a question of the amount of time available for field work, but ten years is a safe estimate. Most bird students waste a lot of time by starting to look for birds before they know anything about them, and as a result most of the first year or two is relatively profitless. It is perfectly possible to go south or west for the first time into a totally different avifauna, and recognize every species immediately.

(4) Above all, the student should cultivate the scientific attitude of mind, and he should never believe in his infallibility. The beginner's notebook is all question marks. The student who is beginning to know birds really well often has no question marks. The notebook of the trained ornithologist always has many question marks, until death closes the notebook.

The above constitute a minimum of requirements for a trained field ornithologist. Short of this his records must be examined most critically. To attain these qualifications calls for no special gifts or capabilities. The time required depends upon the time given. In fact, granted the goal, failure of attainment implies laziness and lack of interest. Some of the best field ornithologists this country has ever produced have been busy men absorbed in a totally different career, with whom ornithology has been purely a hobby.

Like any other study which is really worth while and productive of results, the genuine student will never be satisfied with the minimum. The pleasure of seeing a rare visitor or a total stranger in one's locality is increased if it can be recognized at once, it is doubly increased if it is an old acquaintance, seen previously somewhere else in its normal range. It is obvious therefore that an ever-increasing knowledge of North American birds and an ever-widening field experience can only add to the pleasure derived from the study as well as the scientific value of any given sight record. I do not want to close this paper on field ornithology, the subject which I love best in the world, on the harsh basis of

requirements and necessities. It is a trite aphorism that the enjoyment of a subject increases as our knowledge of it increases. So let us not think of requirements, but take the steps that will bring us the greatest possible enjoyment. One of the greatest advantages of field ornithology is that the more we know about it, the more we enjoy it, and the more we can benefit others. Its true student need never worry about criticism or incredulity.

American Museum of Natural History, New York

A CALENDAR OF BIRD MIGRATION.

BY NORMAN CRIDDLE.

In presenting the tables on bird migration given below a few explanations are necessary. To begin with, it must be realized that while all reasonable efforts have been made towards accuracy there are times when even the most careful observers fail to differentiate between closely allied species, and since collecting on a sufficiently wide scale is out of the question the determinations must be chiefly by sight. I believe there are very few errors in these records as a result of this method, but I wish to draw attention to the fact that very little attempt has been made to distinguish between geographical races excepting in a few cases when the habits of the birds involved can also be taken into account, but I have given the racial name when the evidence at hand indicates that it most probably applies to the bird reported. As an example all Meadowlarks, whether in song or not, are assumed to be *neglecta*, that being the dominant and probably the only race found in Manitoba, but the racial name must not be taken too literally.

These observations were made in the country at a place called Aweme in Manitoba, Lat. 49° 42′; Long. 99° 33′; they were commenced during the spring of 1895 and terminated in the fall of 1920, thus covering a period of 25 years. The country is semi-wooded but lacks surface water other than that supplied by the Assiniboine River some three miles away. The lack of water nea

at hand makes the calendar essentially one of land birds and this should be kept in mind when comparing records.

Observations of less than ten years show that the species is either rare or irregular in its appearance.

All species noted in less than five years have been omitted from the list.

The names given are those in use in the A. O. U. 'Check-List' of 1910 and since the list is mostly of local interest, the scientific names have been omitted to save space.

In conclusion I desire to acknowledge an indebtedness to my brothers Evelyn, Stuart and Talbot for furnishing me with many of the records from which these tables have been compiled.

SPRING MIGRATION 1895–1920

No. of years observed	Name of bird	Average date of first arrival	Earliest date of first arrival
25	Prairie Horned Lark	Feb. 21	Feb. 9, 1918
25	Crow	Mar. 22	Feb. 25, 1911
25	Red-tailed Hawk (also Western)	Mar. 23	Mar. 11, 1902
25	Tree Sparrow	Mar. 24	Mar. 12, 1914
18	Canada Goose	Mar. 26	Mar. 16, 1915
25	Marsh Hawk	Mar. 26	Mar. 11, 1902
8	Saskatchewan Horned Lark	Mar. 28	Mar. 17, 1914
25	Lapland Longspur	Mar. 29	Feb. 24, 1918
25	Slate-colored Junco	Mar. 30	Mar. 17, 1910
25	Western Meadowlark	Apr. 1	Mar. 21, 1911
21	Killdeer	Apr. 3	Mar. 23, 1910
18	Mallard	Apr. 3	Mar. 23, 1910
23	Rough-legged Hawk (sp.?)	Apr. 4	Mar. 11, 1910
20	Rusty Blackbird	Apr. 4	Mar. 23, 1910
25	Robin	Apr. 6	Mar. 23, 1907
5	Shufeldt's Junco	Apr. 6	Mar. 24, 1910
13	Scaup Duck (Lesser?)	Apr. 8	Apr. 2, 1906
24	Sparrow Hawk	Apr. 8	Mar. 17, 1905
24	Red-winged Blackbird	Apr. 9	Mar. 23, 1910
13	Long-eared Owl	Apr. 10	Mar. 28, 1920
11	Golden-eye	Apr. 10	Mar. 28, 1910
22	Sandhill Crane	Apr. 10	Apr. 6, 1905
25	Herring Gull	Apr. 11	Apr. 2, 1906
23	Chestnut-collared Longspur	Apr. 11	Mar. 24, 1911
11	Brewer's Blackbird	Apr. 11	Mar. 28, 1910

No. of years observed	Name of bird	Average date of first arrival	Earliest date of first arrival
12	Huchins' Goose?	Apr. 12	Apr. 2, 1906
10	Green-winged Teal	Apr. 13	Apr. 8, 1908
20	Sharp-shinned Hawk	Apr. 13	Mar. 28, 1911
25	Northern Flicker	Apr. 13	Mar. 30, 1918
25	Song Sparrow	Apr. 14	Apr. 5, 1910
8	Whooping Crane	Apr. 15	Apr. 9, 1901
10	Merganser	Apr. 16	Apr. 8, 1901
20	Bronzed Grackle	Apr. 16	Apr. 7, 1910
25	Western Vesper Sparrow	Apr. 18	Apr. 12, 1918
7	Bluebird	Apr. 18	Mar. 27, 1918
21	Fox Sparrow	Apr. 19	Apr. 9, 1919
20	Mourning Dove	Apr. 19	Apr. 9, 1910
22	Swainson's Hawk	Apr. 21	Apr. 5, 1913
8	Blue-winged Teal	Apr. 22	Apr. 10, 1911
20	White-fronted Goose	Apr. 22	Apr. 5, 1918
7	Shoveller	Apr. 22	Apr. 11, 1903
20	Snow Goose (i. e. Lesser)	Apr. 22	Apr. 5, 1913
6	Phoebe	Apr. 22	Apr. 17, 1916
19	Purple Finch	Apr. 23	Apr. 14, 1918
18	Sprague's Pipit	Apr. 23	Apr. 8, 1910
22	Myrtle Warbler	Apr. 24	Apr. 16, 1917
21	Ruby-crowned Kinglet	Apr. 25	Apr. 16, 1915
15	Greater Yellow-legs	Apr. 25	Apr. 10, 1903
21	Yellow-bellied Sapsucker	Apr. 25	Apr. 16, 1911
22	Franklin's Gull	Apr. 25	Apr. 21, 1903
17	Pipit	Apr. 26	Apr. 15, 1908
7	Long-billed Curlew	Apr. 26	Apr. 9, 1902
9	Bittern	Apr. 27	Apr. 14, 1915
5	Mountain Bluebird	Apr. 27	Apr. 14, 1920
18	Wilson's Snipe	Apr. 27	Apr. 14, 1915
25	Tree Swallow	Apr. 27	Apr. 21, 1911
22	White-throated Sparrow	Apr. 28	Apr. 18, 1915
22	Savanna Sparrow (Western?)	Apr. 28	Apr. 21, 1915
16	Belted Kingfisher	Apr. 28	Apr. 5, 1910
7	White Pelican	Apr. 29	Apr. 9, 1912
14	White-rumped Shrike	Apr. 30	Apr. 8, 1913
9	Blue Goose	May 1	Apr. 9, 1908
11	Swamp Sparrow	May 1	Apr. 9, 1912
20	Yellow-headed Blackbird	May 2	Apr. 21, 1903
19	Hermit Thrush	May 2	Apr. 19, 1917
10	Broad-winged Hawk	May 3	Apr. 8, 1906
24	Clay-colored Sparrow	May 4	Apr. 24, 1901
18	Golden Plover	May 4	Apr. 28, 1911

No. of year observed	Name of bird	Average date of first arrival	Earliest date of first arrival
22	Upland Plover	May 5	Apr. 30, 1901
23	Cowbird	May 5	Apr. 23, 1908
5	Smith's Longspur	May 6	Apr. 30, 1913
15	Chipping Sparrow	May 7	May 2, 1911
20	Palm Warbler	May 8	Apr. 30, 1915
21	Orange-crowned Warbler	May 8	Apr. 30, 1903
19	Black and White Warbler	May 8	Apr. 30, 1901
17	White-crowned Sparrow	May 8	Apr. 29, 1913
25	Harris's Sparrow	May 8	May 3, 1915
10	Spotted Sandpiper	May 9	Apr. 25, 1915
9	Black-throated Green Warbler	May 9	Apr. 30, 1915
24	Brown Thrasher	May 9	May 2, 1901
12	Lincoln's Sparrow	May 9	Apr. 25, 1911
15	Sora	May 10	May 1, 1901
21	Least Flycatcher	May 10	May 1, 1901
17	Barn Swallow	May 12	May 2, 1912
18	Gray-checked Thrush	May 13	May 5, 1914
7	Olive-backed Thrush	May 13	May 8, 1902
25	Whip-poor-will	May 13	May 1, 1901
24	Western House Wren	May 13	May 3, 1911
8	Cliff Swallow	May 13	May 2, 1912
21	Black-poll Warbler	May 14	May 9, 1902
11	Purple Martin	May 14	May 8, 1910
23	Bank Swallow	May 14	Apr. 28, 1911
16	Grinell's Water-Thrush	May 14	May 4, 1914
23	Ovenbird	May 14	May 8, 1914
19	Tennessee Warbler	May 14	May 9, 1920
23	Yellow Warbler	May 14	Apr. 30, 1897
20	Blue-headed Vireo	May 14	May 5, 1914
21	Towhee	May 14	Apr. 30, 1903
19	Lark Sparrow (race?)	May 14	May 6, 1920
22	Bobolink	May 15	May 3, 1902
24	Redstart	May 15	May 11, 1903
7	Pine Warbler	May 15	Apr. 15, 1901
15	Pine Siskin	May 16	May 2, 1911
14	Rose-breasted Grosbeak	May 16	May 12, 1902
25	Black Tern	May 16	May 13, 1902
21	Kingbird	May 16	May 10, 1903
21	Willow Thrush	May 17	May 11, 1903
23	Baltimore Oriole	May 18	May 11, 1911
21	Wilson's Warbler	May 18	May 11, 1903
20	Magnolia Warbler	May 18	May 11, 1913
11	Olive-sided Flycatcher	May 18	May 9, 1910

No. of years observed	Name of bird	Average date of first arrival	Earliest date of first arrival
6	Cape-May Warbler	May 19	May 16, 1913
25	Nighthawk	May 19	May 15, 1915
25	Goldfinch	May 19	May 10, 1910
5	Philadelphia Vireo	May 19	May 14, 1913
15	Warbling Vireo	May 20	May 15, 1911
25	Catbird	May 20	May 12, 1912
25	Red-eyed Vireo	May 21	May 15, 1901
10	Crested Flycatcher	May 22	May 14, 1912
13	Ruby-throated Hummingbird	May 24	May 17, 1915
20	Northern Yellow-throat	May 24	May 19, 1909
9	Chestnut-sided Warbler	May 25	May 18, 1914
9	Bay-breasted Warbler	May 26	May 16, 1911
8	Wood Pewee	May 26	May 20, 1909
6	Lark Bunting	May 26	May 18, 1911
5	Connecticut Warbler	May 27	May 18, 1903
9	Canada Warbler	May 28	May 18, 1903
25	Cedar Waxwing	May 29	May 21, 1901
15	Western Wood Pewee	May 30	May 25, 1901
20	Black-billed Cuckoo	May 30	May 21, 1901
11	Mourning Warbler	June 3	May 20, 1904

FALL MIGRATION

No. of years observed	Name of bird	Average date of last observed	Latest date of last observed
15	Black Tern	Aug. 9	Aug. 17, 1920
22	Franklin's Gull	Aug. 10	Aug. 19, 1907
23	Bank Swallow	Aug. 24	Aug. 29, 1913
9	Cliff Swallow	Aug. 28	Sep. 14, 1920
11	Canada Warbler	Aug. 28	Sep. 4, 1914
11	Mourning Warbler	Aug. 29	Sep. 5, 1909
8	Cape May Warbler	Aug. 30	Sep. 12, 1915
8	Connecticut Warbler	Aug. 30	Sep. 3, 1913
21	Baltimore Oriole	Aug. 30	Sep. 5, 1917
10	Olive-sided Flycatcher	Aug. 30	Sep. 20, 1908
14	Warbling Vireo	Aug. 31	Sep. 19, 1910
9	Chestnut-sided Warbler	Sep. 1	Sep. 20, 1911
19	Black-billed Cuckoo	Sep. 2	Sep. 14, 1907
7	Western Wood Pewee	Sep. 2	Sep. 13, 1902
17	Ruby-throated Hummingbird	Sep. 3	Sep. 11, 1910
12	Bay-breasted Warbler	Sep. 3	Sep. 16, 1907
17	Willow Thrush	Sep. 3	Sep. 12, 1915

No. of years observed	Name of bird	Average date of last observed	Latest date of last observed
22	Yellow Warbler	Sep. 4	Sep. 9, 1907
16	Magnolia Warbler	Sep. 4	Sep. 17, 1907
5	Black-throated Green Warb.	Sep. 5	Sep. 13, 1917
23	Rose-breasted Grosbeak	Sep. 5	Sep. 19, 1907
19	Wilson's Warbler	Sep. 6	Sep. 21, 1911
21	Upland Plover	Sep. 6	Sep. 18, 1907
16	Crested Flycatcher	Sep. 7	Sep. 20, 1908
23	Kingbird	Sep. 8	Sep. 17, 1917
16	Tree Swallow	Sep. 9	Oct. 7, 1920
19	Black and White Warbler	Sep. 9	Sep. 19, 1918
15	Black-poll Warbler	Sep. 9	Sep. 15, 1912
24	Nighthawk	Sep. 10	Sep. 24, 1917
12	Sora	Sep. 11	Oct. 3, 1907
13	Pine Warbler	Sep. 11	Sep. 25, 1907
16	Grinnell's Water-Thrush	Sep. 12	Sep. 29, 1918
17	Spotted Sandpiper	Sep. 14	Oct. 7, 1908
20	Gray-cheeked Thrush	Sep. 14	Sep. 27, 1915
11	Bobolink	Sep. 14	Sep. 20, 1910
21	Red-eyed Vireo	Sep. 14	Sep. 23, 1913
21	Ovenbird	Sep. 15	Sep. 28, 1912
21	Least Flycatcher	Sep. 15	Sep. 25, 1918
14	Barn Swallow	Sep. 16	Sep. 27, 1920
17	Northern Yellow-throat	Sep. 17	Sep. 26, 1913
23	Brown Thrasher	Sep. 17	Sep. 24, 1909
19	Redstart	Sep. 18	Sep. 28, 1920
12	Towhee	Sep. 18	Sep. 29, 1920
22	Catbird	Sep. 19	Sep. 29, 1908
7	Yellow-headed Blackbird	Sep. 21	Oct. 20, 1911
20	Duck Hawk	Sep. 21	Oct. 18, 1915
14	Chipping Sparrow	Sep. 22	Oct. 4, 1920
23	Clay-colored Sparrow	Sep. 22	Oct. 1, 1918
17	Tennessee Warbler	Sep. 24	Oct. 3, 1914
23	House Wren (Western?)	Sep. 24	Oct. 1, 1913
18	Swainson's Hawk	Sep. 25	Oct. 3, 1920
16	Orange-crowned Warbler	Sep. 27	Oct. 10, 1918
20	Killdeer	Sep. 29	Oct. 9, 1911
19	Yellow-bellied Sapsucker	Sep. 30	Oct. 10, 1910
21	Purple Finch	Oct. 2	Oct. 10, 1909
13	Sprague's Pipit	Oct. 2	Oct. 4, 1920
24	Chestnut-collared Longspur	Oct. 3	Oct. 12, 1914
18	Swamp Sparrow	Oct. 4	Oct. 10, 1911
12	Belted Kingfisher	Oct. 5	Oct. 12, 1911
17	Hermit Thrush	Oct. 6	Oct. 15, 1917

No. of years observed	Name of bird	Average date of last observed	Latest date of last observed
9	Mountain Bluebird	Oct. 7	Oct. 16, 1900
10	Savannah Sparrow (Western?)	Oct. 8	Oct. 14, 1911
10	Bluebird	Oct. 10	Nov. 1, 1911
19	Sparrow Hawk	Oct. 10	Oct. 20, 1908
23	Western Vesper Sparrow	Oct. 10	Oct. 15, 1909
23	Northern Flicker	Oct. 10	Oct. 18, 1907
23	White-throated Sparrow	Oct. 11	Oct. 23, 1907
19	Sharp-shinned Hawk	Oct. 11	Oct. 19, 1910
21	Mourning Dove	Oct. 12	Nov. 12, 1913
15	Sandhill Crane	Oct. 13	Oct. 31, 1900
22	Song Sparrow	Oct. 15	Oct. 22, 1907
22	Goldfinch	Oct. 16	Nov. 7, 1909
11	Lincoln's Sparrow	Oct. 17	Oct. 27, 1913
24	Crow	Oct. 18	Nov.
18	Wilson's Snipe	Oct. 20	Nov. 15, 1912
20	Red-tailed Hawk	Oct. 23	Oct. 30, 1901
23	Western Meadowlark	Oct. 24	Nov. 6, 1900
19	Red-winged Blackbird	Oct. 24	Oct. 28, 1908
15	Bronzed Grackle	Oct. 25	Nov. 8, 1901
7	Bittern	Oct. 25	Nov. 6, 1918
14	Pine Siskin	Oct. 26	Nov. 10, 1909
18	Rough-legged Hawk (sp.?)	Oct. 28	Nov. 5, 1904
23	Robin	Oct. 29	Nov. 13, 1910
21	Marsh Hawk	Oct. 30	Nov. 8, 1911
24	Slate-colored Junco	Nov. 4	Nov. 12, 1914
5	Green-winged Teal	Nov. 5	Nov. 9, 1915
5	Golden-eye	Nov. 5	Nov. 10, 1905
5	Blue-winged Teal	Nov. 6	Nov. 11, 1908
21	Rusty Blackbird	Nov. 7	Nov. 14, 1914
19	Scaup Duck (Lesser?)	Nov. 9	Nov. 17, 1912
23	Canada Goose	Nov. 13	Nov. 25, 1904
21	Mallard	Nov. 13	Nov. 21, 1901
24	Prairie Horned Lark	Nov. 14	Nov. 23, 1917

ARRIVALS FROM THE NORTH

No. of years observed	Name of bird	Average date first observed	Earliest date observed	No. of years observed	Average date last observed	Latest date observed
10	Great Yellow-legs	Aug. 8	July. 27, 1900	6	Sep. 26	Nov. 5, 1909
9	Red-breasted Nuthatch	Aug. 24	Aug. 12, 1910	9	Oct. 7	Oct. 17, 1907
12	Blue-headed Vireo	Aug. 26	Aug. 21, 1908	12	Sep. 8	Sep. 20, 1905
14	Golden Plover	Aug. 30	Aug. 6, 1901	12	Oct. 5	Oct. 16, 1897
15	Ruby-crowned Kinglet	Sep. 5	Aug. 24, 1915	15	Oct. 7	Oct. 14, 1904
22	Lapland Longspur	Sep. 6	Aug. 24, 1907	21	Nov. 16	Dec. 31, 1913
22	Myrtle Warbler	Sep. 12	Aug. 24, 1915	22	Oct. 10	Oct. 20, 1909
21	Pipit	Sep. 11	Sep. 2, 1905	20	Oct. 15	Oct. 28, 1914
14	Palm Warbler	Sep. 17	Sep. 2, 1913	13	Oct. 5	Oct. 7, 1908
22	Harris's Sparrow	Sep. 19	Sep. 10, 1912	22	Oct. 9	Oct. 20, 1917
9	White-crowned Sparrow	Sep. 22	Sep. 10, 1911	8	Oct. 2	Oct. 17, 1912
11	Fox Sparrow	Sep. 23	Sep. 12, 1914	8	Oct. 9	Oct. 20, 1917
21	Tree Sparrow	Sep. 26	Sep. 9, 1901	20	Nov. 6	Nov. 15, 1900
14	White-fronted Goose	Oct. 2	Sep. 7, 1902	14	Oct. 18	Nov. 1, 1920
18	Huchins' Goose	Oct. 4	Sep. 13, 1914	16	Oct. 16	Nov. 20, 1912
12	Golden-crowned Kinglet	Oct. 10	Sep. 25, 1912			
21	Snow Bunting	Oct. 11	Sep. 24, 1914	19	Apr. 30	May 23, 1918
18	Red-poll	Oct. 11	Oct. 2, 1913	13	Apr. 21	May 27, 1907
19	Northern Shrike	Oct. 12	Sep. 27, 1898			
21	Lesser Snow Goose	Oct. 13	Sep. 24, 1901	19	Oct. 20	Oct. 31, 1900
9	Blue Goose	Oct. 13	Sep. 12, 1902	8	Oct. 19	Oct. 24, 1908
14	Snowy Owl	Oct. 20	Sep. 26, 1896	2	Apr. 26	May 2, 1917
13	Evening Grosbeak	Oct. 27	Oct. 12, 1913			
17	Pine Grosbeak	Oct. 30	Oct. 10, 1902	3	Mar. 17	Mar. 30
9	Bohemian Waxwing	Nov. 4	Oct. 20, 1903	3	Apr. 3	Apr. 19, 1920

NOTES

HUCHINS' GOOSE.—Following Macoun's 'Catalogue of Canadian Birds' I have applied the above name to the small goose, superficially resembling *canadensis*, which is met with during migration in Manitoba. It averages five and a half pounds in weight as against ten pounds in the Canada Goose and measures about 28 inches in length. Its notes are much shriller than those of *canadensis*.

SANDHILL CRANE.—Doubtless records of the Little Brown Crane are mixed with these but specimens collected all appear to belong to the larger species as they weighed twelve or more pounds.

RED-TAILED HAWK.—Two races occur in Manitoba but I have not been able to distinguish them in flight.

ROUGH-LEGGED HAWK.—I have included both *lagopus sancti-johannis* and *ferrugineus* under this name being unable to accurately separate them in migration. The latter breeds in the vicinity.

Prairie Horned Larks and Lapland Longspurs occasionally remain throughout the winter. There are two distinct migratory periods of the latter, indicating that two races are involved.

In the fall migration records birds known to be, or suspected of being belated due to lack of migratory instinct have been omitted.

Treesbank, Manitoba

SEXUAL SELECTION AND BIRD SONG.

BY CHAUNCEY J. HAWKINS.

IN an article I wrote for 'The Auk' for October, 1918, on 'Sexual Selection and Bird Song,' the objection was raised against my position that, while my argument made "it seem very probable that bird-song had its origin—its first cause—in the 'maleness' of the males," I failed to show how "the multiplicity of songs of the various species of birds, the extremely elaborate songs of some, could have acquired their present forms except by some continuous selective process." The criticism was perfectly just and my only reply to it is that in the article I was not dealing with this phase of the question. If I succeeded in establishing the fact that bird-song had its origin in the maleness of the males, I feel confident that I laid the foundation for a more reasonable theory of how bird-songs, with their great variety, acquired their present forms than is found in the commonly accepted sexual selection theory.

The entire discussion of this complex problem rests upon a question which I have never seen adequately treated in connection with the sexual selection theory of the origin of bird-songs, namely, whether the evolution of subspecies, varying from the species type, was made from a single individual or from a number of individuals? Upon the settlement of this question rests the truth or the fallacy of the claims of those who have supported the sexual selection theory. If the variation which has resulted in subspecies has come from a single individual then there is a background of fact upon which the Darwinian disciples may build, but if the subspecies came through the variation of a group of individuals it is difficult to conceive how their arguments can be maintained.

Morgan in his 'Evolution and Adaptation' states the case in a clear and forceful manner: "If amongst the descendants of a single individual a new form or a number of new forms were to arise, then, if they represented only a variety, they would cross with the other forms like the parent species; and, under these conditions, it is generally assumed that the new variety would be swamped . . . If, however, a number of new forms appeared at the same time and left a number of descendants, then the probability that the new group might perpetuate itself is greater, and the chance that such a group would arise is in proportion to the number of individuals that vary in the same direction simultaneously. In this case the new species has not come from a single individual or even from a pair of individuals, but from a number of individuals that have varied more or less in the same direction."

This latter theory of evolution is true to most of the facts as we know them at the present time in the bird world. There is scarcely a species of birds in eastern North America in which there are not individual birds which show some slight variations from the type but these variations are lost in the descendants of these birds. Every field student has observed individual Song Sparrows which have had some markings which distinguish them from other members of the species found in a given locality, yet these individual variations are not perpetuated. The Song Sparrows have certainly been in eastern North America long enough to produce a number of subspecies if these subspecies could evolve out of

modifications in single birds. The facts seem to be that all of these color changes have been swamped in the life of the species which remains constant to that form which in the far past evolved from its antitype.

On the other hand the genus *Passerella* in western North America appears to be in a very unstable situation. One writer has given us nineteen subspecies of this genus. Ridgway confines *P. iliaca unalaschesis* to Alaska and separates it from the form that comes to northern California as *townsendi*. A variety found on Kadiak Island and wintering south to California, he calls *insularis*. The back of this bird he describes as a warm sepia brown, the spots on the breast larger and a deeper brown, and the tail feathers strongly tipped with buff. *P. i. annectens* is similar to *insularis* but smaller, especially the bill, while the color is slightly browner. It is found in Alaska from Cross Sound to Prince William Sound and winters south to California. *P. i. meruloides* is also similar to *insularis* but smaller and the coloration throughout is darker. *P. i. towsendi* is like annectens but the color is darker and the spots on the chest are larger. It breeds on the coast of southern Alaska and winters to northern California. *P. i. fuliginosa* is like *towsendi* but is darker and the spots on the under parts are larger and more confluent.

We recognize that the classification of the subspecies of *Passerella* is still to be finally determined but enough has been done to enable us to recognize definite geographical limits to many of these varieties. It is evident that something is taking place in the western Fox Sparrow which is not occuring in his eastern relative. In the west there is not merely a single individual branching from the parent type but, under the influence of climate, and other undetermined factors, large numbers of individuals of a species are departing from the type. In the east a variation may occur now and then in an individual but it is lost in succeeding generations, while in the west where the variation occurs in a group of birds it survives with the result that a new subspecies evolves.

It is also a recognized fact that many variations of both plants and animals will continue so long as these animals or plants remain under given climatic conditions but if removed to a different climate they will revert to their original type. There are other

plants and animals whose variations have become fixed and they will remain constant though removed to a different climate. This would seem to indicate that in the latter class, when a group of individuals begins to interbreed, "their descendants come to have, after a time, the common blood, so to speak, of all the new forms. If with each union there is a blending of the substances of the individuals, there will result in the end a common substance representing the commingled racial germ-plasm."

When one turns to a study of the songs of birds he finds the same general principle which he discovers in the study of plumage. There are many variations in the songs of our common eastern Song Sparrow. The late John Burroughs said: "I stood one day by a trout stream and suspended my fishing for several minutes to watch a Song Sparrow that was singing on a dry limb before me. He had five distinct songs, which he repeated one after the other. He may have had a sixth or seventh, but he bethought himself of some business in the next field and flew away before he had exhausted his repertory." I was abroad in the fields early one spring when a song came floating over the meadow that was new to my ear. Had some bird strayed from its usual course of migration? This was the first thought that came to my mind. I soon located the song, coming from a clump of alders growing by the side of an old stone wall. It had some suggestion of the notes of a Red-wing. There were many of them about the meadow. This might be a Red-wing improving his song. I approached quietly until the singer was in plain sight,—a common Song Sparrow. His first two notes were more suggestive of our Red-wing than any imitation I had ever heard but at the end of these first notes came a broken, imperfect trill, too low to be heard at a distance. I listened to the bird for a long time and could watch his motions. He was having difficulty in getting out this song. It did not come as easily as his native one and, as I listened, I could not resist the conviction that the bird was trying to imitate the songs of the Red-wings which were coming from different parts of the meadow.

While these observations are interesting they are rare exceptions and the outstanding fact is that these exceptions are not perpetuated in the life of the species nor in subspecies. They are lost with the individuals.

But when we turn from the study of individuals to the group of individuals which has assumed the rank of subspecies then divergences are perpetuated. Unless one listened closely to some of the western chickadees he might think a visitor from Maine had taken a vacation in the west. Whether one is listening to the Mountain Chickadee, the Chestnut-backed or the Long-tailed he can never fail to recognize the chickadee note, pointing to a common ancestry, yet in every one of these species or subspecies of the chickadee there is some slight difference from all the other species or subspecies and this difference, however slight, belongs to all the members of the localized group. It has become a song variation that is passed from generation to generation.

On one journey which covered the states of New England, the southwest, the Pacific Coast, Utah, Idaho, and Montana, I had the privilege of listening to several thrashers. In Arizona I found Bendire's Thrasher, a bird which belongs to the flat country and is more silent than most of its kin. But one morning it mounted the top of a desert bush and poured forth its splendid song. There was no mistaking it for a thrasher song, yet there was something about it that was different from all the others. On the hot sands of southern California I came upon Leconte's Thrasher sitting on the top branch of a small tree and fairly splitting its throat in a song which made me think of the Brown Thrasher singing in the top of an elm tree in Massachusetts yet there was something which was distinctive of this species of birds. Wherever a variation appears in a single individual in its song that variation seems to vanish in its offspring but wherever there is a variation which is common to a group of individuals that variation appears to survive in succeeding generations.

If this is the true biological background of the origin of species and subspecies, even of genera and families, then we pass to an examination of the arguments used in the sexual selection theory. The fact upon which this theory stands or falls is the choice, conscious or unconscious, on the part of the female bird of the most strikingly colored or the best singer among the males. It is our judgment that this choice has never been proven. On the other hand, we believe from observation of bird life that whenever any male bird, be he the least gifted singer of his species, approaches a female at

the hour of her sexual ripeness and succeeds in breaking down her reluctance there is a mating. But for the sake of argument, let us admit that the female does choose the best singer and the most brilliantly colored bird. Her choice must be of an individual bird, say a male Song Sparrow who sings better and is more attractively colored than any other member of his species who has made advances toward this female. This choice, however, is no aid to our sexual selection theory unless these advantages are repeated in the offspring of this union. If they are repeated, then there must be a starting point of a new branch which culminates, at least, in a new subspecies, and there must be as many subspecies started as there are matings with distinctively varied birds. This however does not appear to be the fact. There has been no such breaking up of the species of Song Sparrows in eastern North America. The song type of the species remains constant in the east as does also the plumage.

Indeed, if there actually occurred in any species what can be the only logical conclusion from the premises of the friends of the sexual selection theory, would there be anything left of species? Would not each pair of birds which had mated, provided they possessed any individuality either in song or plumage, be a starting point for a new group of individuals? In a little while the individuals, each differing from all others, would be more common than the species type. This may seem like an attempt to reduce the whole argument to an absurdity, yet we confess that it appears to be the logical conclusion from the fundamental postulates. The weakness of the whole argument is found in the fact that it rests upon a single individual rather than upon a group of individuals.

Turning from the negative to the positive side of this discussion, it remains for us to show how the diversity of bird songs arose out of the maleness of the male. The most powerful factor in the growth of bird-song, so far as external conditions are concerned, is not imitation but isolation. Imitation is the conservative factor in the elaboration of songs rather than the radical factor which it has too often been considered. It has been used too often as a means of showing how birds, imitating the songs of other birds, have copied some of their notes and incorporated them into

their phrasings. Indeed, a great deal of emphasis has been placed on those rare instances where birds have been taken from their nests at an early stage of their development and kept with different species so they have never learned their own song but that of the bird with which they associated. But these are such exceptional cases, always artificial, and often so poorly authenticated, that they have little importance. The chief thing about imitation is that the nestlings learn to sing by imitating the parent birds and are thus from the earliest days bound to the song type of their kind. Thus imitation becomes a tremenduously conservative force in the normal course of nature, tending to keep the offspring true to the type instead of leading them toward diversity in song.

Isolation from the main body of the species is the chief factor in the creation of subspecies. *Melospiza* pushes into the northwestern part of the United States, and, isolated by mountain ranges, under the influence of a moisture-ladened atmosphere, evolves into *rufina*. But, while climate is working its color miracles, isolation is also having its effect upon the song of the birds. If a man goes to a country where the people speak a language unlike his own, say Spanish, he not only acquires a new tongue, but, through long years of isolation, from those who speak his language, he find there is some modification in his native speech. When he returns to his native land, he discovers that he has unconsciously acquired a slight difference in accent and modulation. May not something like this happen through generations of bird-song? As some of the Song Sparrows became separated from their species there arose, through the mere fact of isolation, a slight difference both in tonality and phrasing until these became acquired characteristics and remained permanent. This, I believe is a fact in the building of bird songs which has not been given sufficient weight. Imitation tends constantly to bind the song to the original type of the species but isolation weakens this conservative factor and permits divergence.

It is true that taken alone this fact of isolation is not sufficient to account for the wide variations and the amazing complexity of songs. It is probably a very slight factor in the total process. Mr. Allen writing in 'The Auk' for October, 1919, says: "Is it not reasonable to assume that courtship excitement should lead to a

more and more elaborate form of song-expression as the development of the species goes on, and that the song of the more excited moments should always be somewhat in advance of the ordinary song in point of fervor and elaboration? This view of the development of bird-song might be stated as follows: Let S represent the song first developed out of the call-notes of a certain species. S becomes elaborated as SS under stress of unusual emotion, and SS becoming fixed in the psychology of the species, the bird has two songs, S and SS, the latter a special mating-song uttered at times of only great sexual excitement; then SS tends to become the ordinary song, and a further elaboration, SSS, is evolved to express the unusual emotion for which SS is no longer adequate."

This statement, when taken by itself, seems to be in perfect accord with the facts. It is only when "courtship excitement" is interpreted in terms of the choice of a particular male by the female and that the song SS or SSS is perpetuated as a result of their mating that the theory passes beyond what the facts warrant. "Courtship excitement" is something which grows out of the inner life of the bird, however much it may be stimulated by external conditions. When the sex glands ripen and the harmones are set free the whole nervous system of the bird is stimulated. Then the bird, so to speak, is "beside himself." There is that within him which is driving him to surpass himself. To resort to a homely illustration, no man who loved his sweetheart was ever able to put into words how much he loved her. There is something within him which urges him to a pitch which exceeds his vocabulary. No song was ever adequate to express all that he felt. The inner urge is forcing him to outdo himself. Is not the same thing true in the bird? The entire nervous system, wrought to the highest pitch under the influence of that which has been set free by the sex glands, is ever trying to exceed itself. The bird's song cannot give adequate expression to the inner feeling. That inner drive is ever urging it to do something better. Indulging in a wild dance, the sex stimulation urges it to a wilder dance. Singing at its best, the "craziness" of the bird compels it to sing a better song. This is not only true of the individual; it is true of every individual of a species or a subspecies. Thus the improvement, whether it be in the dance or the song, it not made in one bird but

in a group of birds. The whole species or subspecies is moving upward and the improvement, coming to a group of individuals, may be passed to the offspring, probably through the conservative factor of imitation.

It may be that the song of a species is built out of its call-notes, yet, if our position is true, it is not done in any patchwork fashion. Back of its present call-notes there were more primitive beginnings, the hiss or the grunt, and back of the hiss or the grunt there were those voiceless days when birds, or their ancestors, tried to express their inner life in motion or dance. But the inner sex life had to find expression and the expression was always inadequate to the inner feeling. The creature was always trying to outdo itself and in this attempt is found the primary cause both for variety in song and dance.

If this is the correct view of this difficult question, it is no more amazing that there should be such a variety of bird-songs than that there should be such a variety of colors in birds. This theory seems to simplify the whole process. I am satisfied that we shall never escape the chaos in which we find ourselves at present so long as we continue the attempt to show how bird-songs have grown through mimcry or imitation or through sexual selection. The whole problem is simplified and placed on an understandable basis when we consider song as a growth under the inner urge of the bird, through sexual excitation, to outdo itself and thus see the song of the bird ever pushing out from crude beginnings to something more complex.

129 Fairmount St., Lowell, Mass.

NOTES ON TUBINARES, INCLUDING RECORDS WHICH AFFECT THE A. O. U. CHECK-LIST.

BY ROBERT CUSHMAN MURPHY.

1. **Thalassarche chlororhynchos** (Gmelin). YELLOW-NOSED MOLLYMAWK.

The first North American record of this subantarctic albatross is based upon a skin in the American Museum of Natural History (collection of Dr. L. C. Sanford, No. 9835). The specimen is an adult of unknown sex. It was collected near Seal Island, off Machias Bay, Maine, on August 1, 1913, by Mr. Ernest O. Joye, subsequently coming into the possession of Mr. Allen L. Moses and, finally, that of Dr. Sanford. Seal Island is Canadian territory, and since the locality in which the bird was killed is on the international border, south of Grand Manan, the record constitutes an addition to the local avifauna of both New Brunswick and Maine.

The specimen closely resembles others collected by the writer in the South Atlantic Ocean. The fact that its sex was not determined decreases the value of measurements, which are, however, as follows: Wing 482; tail 186; culmen 116; tarsus 78; middle toe with claw 114 mm.

Thalassarche chlororhynchos is of circumpolar distribution in the southern hemisphere. Its Atlantic breeding grounds are presumably in the "Tristan da Cunha Subarea," as recently defined in Dr. Roberto Dabbene's admirable paper on the petrels and albatrosses of the South Atlantic.[1] Sufficient material is not available for a determination of the subspecific status of the Atlantic bird, or of its relationship with the "*Thalassogeron eximius*" of Verrill.

2. **Calonectris kuhlii kuhlii** (Boie). MEDITERRANEAN SHEARWATER.

While examining series of North American examples of the large shearwater described by Cory as *Puffinus borealis* (Bull. Nuttall Orn. Cl. Vol. 6, p. 84, 1881), the writer has occasionally encountered

[1] El Hornero, Vol. 2, No. 3, pp. 157–179, 1921.

remarkably small specimens, the difference in size, especially noticeable in the bill, being so great as to appear to represent something more than individual variation. Four such birds in the American Museum of Natural History (collection of Dr. Jonathan Dwight) were taken in Long Island waters by Dr. William C. Braislin. That their aberrant aspect among the series of ordinary Cory's Shearwaters has been previously noted is evident from interrogation marks accompanying the entries in Dr. Dwight's catalogue.

The four specimens referred to are fully adult, molting birds. A comparison of the skins with Mediterranean Shearwaters from the southern coasts of France and Spain indicates that the peculiar Long Island birds belong to the same race. The resemblance extends to the diagnostic white marking on the inner web of the outer primaries, a character first pointed out by Hartert and Ogilvie-Grant (Novitates Zoologicae, Vol. 12, p. 97, 1905) who wrote: "in *P. kuhlii kuhlii* a large white mark or some white mottling extends beyond the under wing-coverts, sometimes to beyond the middle of the feathers." The same authors showed that this character is not shared by the larger race of *P. kuhlii* inhabiting the Azores, Canaries, Madeira, etc. It is likewise lacking in North American specimens of Cory's Shearwater.

The records and measurements of the four Long Island birds, together with similar data for typical examples of Cory's shearwater are as follows:

Calonectris kuhlii kuhlii (Boie)

	Wing	*Tail*	*Culmen*	*Tarsus*	*Middle toe with claw*
45827 ♂ Dwight Coll., Montauk Point. N. Y., Aug. 15, 1907.	342	129	47	54	68
45828 ♂ Dwight Coll., Montauk Point, N, Y., Aug. 15, 1907.	329	129	48	51	62
45825 ♂ Dwight Coll., Off Amityville, N. Y., Oct. 4, 1902.	314	122	45	49	61
45826 ♀ Dwight Coll., Off Amityville, N. Y., Oct. 4, 1902.	322	117	46	49	65

Calonectris kuhlii borealis (Cory)

	Wing	*Tail*	*Culmen*	*Tarsus*	*Middle toe with claw*
8975 ♂ Sanford Coll., New York Bay, Sept. 9, 1918.	358	136	57	56	74
24449 ♂ Dwight Coll., Narragansett Bay, R. I., Sept. 29, 1886.	355	133	56	55	72
64709 ♂ Amer. Mus. Coll., Off Amagansett, N. Y., Oct. 20, 1887.	347	133	56	57	70
24450 ♀ Dwight Coll., Narragansett Bay, R. I., Sept. 29, 1886.	349	133	54	56	70

Cory's description and published measurements of the type specimen of "*Puffinus borealis*" make it clear that it was the larger race which he collected and named.

The type locality of the "*Procellaria kuhlii*" of Boie, the form now added to the known avifauna of North America, is the coastal waters of Corsica. Its breeding range, so far as determined, is confined to the Mediterranean, the Adriatic, the Aegean, and the Sea of Marmora, but during its wanderings it passes Gibralter and enters the pelagic range of *Calonectris kuhlii borealis*, sometimes as is evident, reaching the coast of North America. The Mediterranean Shearwater should therefore be included in the next edition of the A. O. U. 'Check-list.' American collections of Cory's Shearwaters ought, moreover, to be examined for additional specimens of the Mediterranean race.

3. **Oceanodroma hornbyi** (GRAY). HORNBY'S PETREL.

Oberholser (Auk, Vol. 34, pp. 465, 466, 1917) has shown that this petrel must remain in the genus *Oceanodroma*. He also states his reasons for the opinion that the species should be reinstated in the regular list of North American birds.

For many years after G. R. Gray had described Hornby's Petrel, in 1853, the original skin in the British Museum remained unique. The type bore no label, but was believed to have come from the northwest coast of America.

In 1887 (*fide* Godman, 'Monogr. Petrels,' p. 36, 1907) E. W. Nelson reported that he had seen numbers of Hornby's Petrels "both in May and October, while crossing a part of the Pacific,

some 500 miles broad, bordering the Aleutian chain." Doubts were subsequently cast upon the identification, however, by Henshaw.

In 1895 the National Museum of Chile, at Santiago, obtained two immature specimens, including a nearly full-grown bird with only a few traces of grayish-white down still clinging to its belly. These came from an inland region, east of Taltal. They were not recognized as *Oceanodroma hornbyi*, and were described anew by R. A. Philippi as "*Procellaria* (*Oceanites*) *collaris*" (Verhandlungen des deutschen wissenschaftlichen Vereins zu Santiago de Chile, Vol. 3, Pt. 1, pp. 11–13, plate). Philippi's account states:

"Das Exemplar von Sturmschwalbe, dessen Beschreibung ich hiermit gebe, is dadurch besonders merkwürdig, dass es inmitten des Landes, östlich von Taltal, in Gesellschaft eines ganz jungen Vögelchens, welches noch mit dem vollen Flaum bekleidet ist, todt gefunden wurde. Unser Museum verdankt es H. Dr. Darapsky.

"Der vogel hat ganz die Grösse und Gestalt der übrigen Sturmschwalben, von denen er sehr leicht durch folgende Diagnose unterschieden werden kann."

The Latin diagnosis which follows, the recorded measurements, and the full page, monochrome plate, made from a crayon drawing, leave no room for doubt that the specimen described was *Oceanodroma hornbyi* notwithstanding minor discrepancies in the amount of white pictured on the face and throat. The figure was drawn from a poorly mounted bird, which doubtless accounts for slight distortions of the color areas. Both of the specimens have been seen by Dr. Frank M. Chapman during visits to Santiago.

The description of *Procellaria collaris*, and a subsequent, slightly more detailed account by Philippi (*vide infra*), were apparently overlooked by Godman, for the specific name *collaris* appears neither in the index nor the synomymy of the 'Monograph of the Petrels'.[1]

During the Brewster–Sanford South American expedition of the American Museum of Natural History, Mr. Rollo H. Beck collected 56 specimens of *Oceanodroma hornbyi* in the offshore waters of the

[1] The Chilean specimens are referred to again by Quijada in the Catalogo ilustrado i descriptivo de las Aves Chilenas, Bol. Mus. Nac. Chile, Vol. 1, No. 8 (pp. 82, 83 of the repaged extract), 1911.

Peruvian coast, and proved that the species is a common bird in this region. Mr. Beck's specimens were all taken during June 1913, between the approximate latitudes of Ancon (11° 47′ S.) and Cerro Azul (13° 4′ S.), in waters from 15 to about 200 miles from the shore. He first noted the species in the vicinity of Hormigas de Afuera Islets, 38 sea miles west of Callao, on June 4. On June 6, when about 200 miles off shore, he obtained the first specimens, along with numerous examples of *Oceanodroma markhami* and other petrels. Thereafter he saw *O. hornbyi* frequently, chiefly beyond 25 miles from shore, often feeding and coming to his bait in groups of a score or so. His notes of June 25, on which date he collected 30 miles off Cerro Azul, contain the observation that in early morning, while the sun was still low, the white breasts of Hornby's Petrels shone like silver as the birds darted back and forth among other species. After June 27 he changed his field of operations to the islands and inshore waters of the Pisco Bay region, and thenceforth saw the species no more.

All of Beck's specimens, the majority of which still remain in the Brewster-Sanford Collection, are birds which had resting sex organs. Most of the individuals were completing, or had recently completed, the molt and renewal of the flight feathers.

In the same month of a later year, June 1916, Dr. Frank M. Chapman also observed Hornby's Petrel along the Peruvian coast. He has kindly supplied me with the following extract from his notes of June 23, 1916:

"Leave Pisco at 7:15, make the Boqueron in the face of a stiff breeze. At 8 A. M., we were about ten miles off shore, and the ocean swarmed with Petrels; a large, black *Puffinus*, and a smaller one, in countless numbers were active, except one flock of several hundred resting on the water. Many Gannets were diving from a height of from fifty to sixty feet. A few Yellow-nosed Albatrosses were seen . . . splendid, sweeping creatures. There were several white-rumped Petrels and dozens of *O. hornbyi*; the latter the most erratic flier I have ever seen . . like a bat, swift, and nighthawk in one. They were skimming here, flitting there, then suddenly swung off with the wind a hundred yards or more so quickly one nearly lost sight of them."

To these field notes Dr. Chapman has added the following

comment, relating to the apparent absence of the species during the period of the year which doubtless includes its breeding season:

"December 4–7, 1918, while *en route* from Callao to Mollendo, I sailed over this same area, but although on the lookout for them I did not see a single Hornby's Petrel."

In Captain R. Paefsler's several records of the capture or identification of sea birds (Journel für Ornithologie, Jahrg. 61, pp. 41–51, 1913; *idem*, Jahrg. 62, pp. 272–278, 1914; and Ornithologische Monatsberichte, Jahrg. 23, pp. 59–61, 71, 72, 1915), there are numerous references to *Oceanodroma hornbyi*, which he observed along the west coast of South America at various points between the latitudes of Chimbote, Peru, and a little north of Valparaiso, Chile. Paefsler evidently recognized the identity of the petrel with Philippi's species, for he employs the name *collaris* as well as *hornbyi*, and he states (J. f. O., 1913, p. 49) that on the night of Feb. 16, 1912, off Nasca, Peru, an example of "*Oceanites collaris* oder *Oceanites hornbyi* an Bord geflogen." Paefsler's records are as follows, most of them being based apparently upon sight identifications:

July 14, 1910.	32° S. 72° W.	(Off Quilimari, N. of Valparaiso).
June 17, 1911.	16° 30′ S. 73° 18′ W.	(Off Islay). One flew on board.
June 18, 1911.	14° S. 76° 18′ W.	(Off Pisco).
July 30, 1911.	17° S. 72° 30′ W.	(Off Ilo).
Feb. 16, 1912.	15° 12′ S. 75° 36′ W.	(Off Nasca). One flew on board.
Feb. 18, 1912.	9° S. 86° W.	(Off Santa Head, N. of Chimbote).
May 30, 1913.	20° 42′ S. 70° 18′ W.	(Off Iquique).
June 6, 1913.	15° S. 75° 48′ W.	(Off Nasca).
June 15, 1913.	23° S. 70° 42′ W.	(Off Mejillones).
Oct. 14, 1913.	29° 30′ S.° 71° 30′ W.	(Off Coquimbo).
Oct. 17, 1913.	20° 36′ S.° 70° 24′ W.	(Off Iquique).
Nov. 13, 1913.	30° S. 71° 36′ W.	(Off Coquimbo).

With regard to the breeding locality of *O. hornbyi*, we have only the information published by Philippi. This author's second paper relating to the species (Anales del Museo Nacional de Chile, Vol. 15, Sect. 1, pp. 90–92, pl. 42, 1902) is in part a reprint in Spanish of the German description cited above, with the addition of a

colored plate. He states somewhat more fully that the mounted specimen in the Santiago Museum was obtained on the tableland east of Taltal, at a considerable altitude, in company with a dead chick of the same species, and that he therefore believes this region to be the petrel's breeding ground. The supposition surely seems to be supported by circumstantial evidence, and it would be altogether plausible were it not that mainland breeding sites are almost unknown among the Tubinares. If the petrels do actually nest in the Chilean mountains, their individual burrows are probably scattered over wide areas, for thickly populated colonies would soon be discovered and decimated by predaceous mammals.

It is rather curious that the aged Dr. Philippi never recognized his bird as *Oceanodroma hornbyi*, for he was at no time confident of the validity of "*Procellaria collaris.*" He wrote, for instance:

"Coues has described in the 'Proceedings of the Academy of Philadelphia' for the year 1864, which I have not been able to consult, two species under the names *O. gracilis* and *O. lineata.* Perhaps our species is one of these, or one of the other described forms of the genera *Thalassidroma* or *Procellaria.* Ornithologists who have at their disposal the pertinent literature may decide" (Translated from the Spanish, *loc. cit.* p. 91.)

From all of the above it is evident that *Oceanodroma hornbyi*, like *O. markhami*, *Thalassidroma tethys*, *Diomedea irrorata*, and several species of *Pterodroma*, is a bird of the warmer, offshore areas of the tropical and subtropical eastern South Pacific. In common with all the forms named, it is truly pelagic during the non-breeding season, ranging hundreds of miles from land, and avoiding the inshore zone of the Humboldt Current where, as the writer learned during investigations in 1919–1920, an entirely distinct assemblage of sea birds, comprising penguins, diving petrels, shearwaters and fulmars of antarctic affinities, and endemic, strictly littoral steganopodes, abound in the cool, upwelling waters close to the coast. If *O. hornbyi* breeds in the southern parts of the Maritime Andes, it must, of course, cross the relatively narrow belt of cool water when passing between its nesting site and its pelagic feeding grounds; but it is rarely or never to be found by day in the inshore region. Loomis's suggestion that "Hornby's Petrel may prove to be a common Southern Hemisphere species

that visits the Northern Hemisphere after its breeding season" (Proc. Calif. Acad. Sci. (4), Vol. 2, Pt. 2, p. 179, 1918) seems unlikely, since it is in general the "cold water" types of southern Tubinares, such as *Puffinus griseus, Priocella, Oceanites oceanicus*, etc., rather than the southern subtropical representatives, which make regular migrations to littoral waters of the northern hemisphere.

Gray's description (Proc. Zool. Soc. Lond., Vol. 21, p. 62, 1853) states that the type specimen of *O. hornbyi* came "from the northwest coast of America," and that Admiral Hornby had "obtained it during his command on the Pacific station," perhaps during the period in which his headquarters were at Vancouver. In view, however, of the known circumstances and the probabilities as to the bird's habitat, together with the fact that the northern range has never been confirmed, and the utter lack of certainty as to the exact source of an unlabeled skin brought to England by a naval officer who had doubtless traversed the entire west coast of South America, it would seem to the writer that the species should be stricken entirely from the list of North American birds unless collateral evidence that the type was taken in the North Pacific can be produced.

American Museum of Nat. Hist., New York.

SUPPLEMENTARY NOTES ON THE BIRDS OF BERKSHIRE COUNTY, MASSACHUSETTS.

BY WALTER FAXON AND RALPH HOFFMAN.

The following notes are offered as a supplement to the authors' 'Birds of Berkshire County, Massachusetts,' published in the 'Collections of the Berkshire Historical and Scientific Society,' Vol. III, pp. 107–166, Pittsfield, Mass., 1900. The numbers enclosed in brackets refer to the pagination of the separates issued at the same time.

P. 115 [9]. **Hylocichla mustelina** (Gmel.). WOOD THRUSH.—Seen as late as September 16 (Stockbridge).

P. 116 [10]. **Hylocichla ustulata swainsoni** (Tschudi). OLIVE-BACKED THRUSH.—Add Washington to the list of towns in which this bird breeds.

P. 117 [11]. **Hylocichla aliciae bicknelli** Ridgw. BICKNELL'S THRUSH.—Since the publication of the Birds of Berkshire the presence of Bicknell's Thrush on the summit of Greylock Mountain has been recorded anew by R. H. Howe, Jr., June 18, 1902, one heard (Auk, XIX, Oct, 1902, p. 405), C. J. Maynard, May 28–30, 1910, about twelve pairs (Record of Walks and Talks with Nature, III, 1910, p. 120), and C. F. Jenney, June 8, 9, 1911, two heard, one seen (Record of Walks and Talks, IV, 1911, p. 173). Some of those seen by Mr. Maynard were undoubtedly transients, since only one or two pairs of Bicknell's Thrushes have ever been found on Greylock in the breeding season.

P. 117 [11]. **Hylocichla fuscescens fuscescens** (Steph.). VEERY.—A Veery shot by the senior author in Lanesborough, Sept. 27, 1900, was recorded in 'The Auk,' XVIII, 1901, p. 198, as *H. f. fuliginosa* Howe (*H. f. salicicola* Ridgw., see Noble, Bull. Mus. Comp. Zool., LXII, 1919, p. 565), but we now believe it is *H. f. fuscescens* in autumn plumage. It is in the Collection of the Museum of Comparative Zoology.

P. 118 [12]. **Penthestes hudsonicus littoralis** (Bryant). ACADIAN CHICKADEE.—In the 'Birds of Berkshire,' p. 118, and previously in 'The Auk,' VII, 1890, p. 408, birds found on Greylock Mountain in December, 1889, were referred to as *Parus hudsonicus* Forster. It has since been found that the individuals belonging to this species that migrate south into Massachusetts in the autumn belong to two geographical races, *Penthestes hudsonicus littoralis* (Bryant) and *P. h. nigricans* C. W. Townsend. It therefore behooves us to revert to these specimens in the light of the knowledge since acquired.

On the 14th of December, 1889, after a few days' stay in Ashby, Mass., the late Mr. William Brewster and the senior author of these 'Notes' went to Laban Wilbur's, the highest of the farms that then lay in the secluded Greylock Notch, North Adams. On the 15th we found one Hudsonian Chickadee in the second-growth spruces above Wilburs' house (altitude, 1600 feet), and on the following day Mr Brewster shot two out of three seen in the same neighborhood. The two that were shot have been determined by Dr. Townsend (Auk, XXXIV, 1917, p. 163) as *P. h. littoralis* (Coll. W. Brewster, No. 30309) and *P. h. nigricans* (Coll. W. Brewster No. 30310). Mr. Brewster was suddenly called home on the evening of the same day, but I remained at Wilbur's until the 20th of December. On the 17th I saw one Hudsonian on the Greylock carriage-road from North Adams, two on the 18th on the "Winter Road" from the Notch to North Adams, and on the 19th a flock of from six to ten among the second-growth spruces in the "Mountain Pasture" on the Greylock carriage-road (alt. 2200 feet); from this flock I shot one, determined by Dr. Townsend (*l. c.*) as *P. h. nigricans* (Coll. W. Brewster, No. 26270).

Thus within a space of four days Mr. Brewster and I found from twelve to sixteen of these birds on the sides of the Greylock Mountain range, which seems to indicate a heavy influx into that region. Nor was the flight confined to *western* Massachusetts: on the 19th of October of the

same year I shot one of a pair found in Arlington, Middlesex Co., (Auk, VII, 1890, p. 408) which proved to be *P. h. littoralis* (Coll. W. Brewster, No. 25621), and another passed the winter of 1889–90 in a pine grove in Waverley in the same County (Auk, *l. c.*). The Waverley bird was not killed and therefore its race was not ascertained.

The two specimens shot by Mr. Brewster in the Greylock Notch on the 16th of October, 1889, afford the only instance, I believe, of the two subspecies being found together.—W. F.

P. 118 [12]. **Penthestes hudsonicus nigricans** C. W. Towns. LABRADOR CHICKADEE. *Vide supra.*

P. 119 [13]. **Telmatodytes palustris palustris** (Wils.). LONG-BILLED MARSH WREN.—This bird was again discovered by us at the upper end of Pontoosuc Lake, Lanesborough, on the 22d of May, 1901, and a pair was found in Hoosac Swamp, Williamstown, in June, 1902, by R. H. Howe, Jr. (Auk, XIX, Oct. 1902, p. 405).

P. 119 [13]. **Cistothorus stellaris** (Naum.). SHORT-BILLED MARSH WREN.—Add Pittsfield to the number of towns in which we have found this Wren.

P. 120 [14]. **Troglodytes aedon aedon** Vieill. HOUSE WREN.—Seen up to Sept. 28.

P. 120 [14]. **Mimus polyglottos polyglottos** (Linn.). MOCKING-BIRD.—One spent the winter of 1917–18 in Williamstown, frequenting a porch to feed on the berries of the Virginia Creeper.

P. 121 [15]. **Vermivora peregrina** (Wils.). TENNESSEE WARBLER.—Two, in full song, were discovered by the junior author at Berry Pond, Hancock, July 21, 1919 (alt. 2000 feet). These taken in connection with the specimen found by the senior author on Mt. Greylock, July 15 and 16, 1888, (Auk, VI, 1889, p. 102) make it highly probable that this species breeds in small numbers in Berkshire.[1]

P. 121 [15]. **Compsothlypis americana usneae** (Brewst.). NORTHERN PARULA WARBLER.—In the summer of 1919 Parula Warblers were seen in the village streets of Stockbridge, apparently breeding in the avenues of Norway Spruces whose pendent branchlets perhaps supplied the place of Usnea lichens.

P. 121 [15]. **Dendroica aestiva aestiva** (Gmel.). YELLOW WARBLER.—One was seen in Stockbridge on the 1st of October.

P. 121 [15]. **Dendroica pensylvanica** (Linn.). CHESTNUT-SIDED WARBLER.—Seen as late as Sept. 23.

---

[1] A Golden-winged Warbler, *Vermivora chrysoptera* (Linn.), has been recorded by Mr. C. J. Maynard (Record of Walks and Talks with Nature, III, 1910, p. 123) as observed on a trip to Mt. Greylock, May 28–30, 1910. No definite locality is specified, the bird being listed with others seen "about the villages." Mr. Maynard was accompanied on this trip by five or six pupils, but he does not remember who was responsible for the identification of the Golden-wing. Under these circumstances the record cannot be taken as a valid one for Berkshire County.

P. 122 [16]. **Dendroica magnolia** (Wils.). MAGNOLIA WARBLER.—Within the last decade there appears to have been a distinct encroachment southward and into the river valleys on the part of certain Canadian birds in Berkshire. This species, for example, was found to be generally distributed in South Sandisfield in the summer of 1912, and during the summer of 1919 it was not infrequently met with in Stockbridge, where it was either very rare or altogether unknown twenty years ago.

P. 123 [17]. **Dendroica castanea** (Wils.). BAY-BREASTED WARBLER.—Extend the period of the vernal migration to May 30.

P. 124 [18]. **Dendroica vigorsi** (Aud.). PINE WARBLER.—Add to the records, Lanesborough, Sept. 25, 1900, one male.

P. 124 [18]. **Seiurus motacilla** (Vieill.). LOUISIANA WATER-THRUSH.—When our 'Birds of Berkshire' was published in 1900, there was but one record of the Louisiana Water-Thrush in the County, viz. Sheffield, June 11, 1896, a pair feeding fledged young (Faxon, Auk, XIII, 1896, p. 344). Since that time we have detected it at Richmond Pond, on the boundary line between Pittsfield and Richmond, one male, June 8, 1901 (Auk, XXVI, 1909, p. 311); one singing in Hulbert's Swamp, Lanesborough, June 9, 1901; a pair, July 2, 1909, on Fife Brook, a tributary of the Deerfield River in the town of Florida, at an altitude of 1900 feet, and one at Berry Pond, Hancock (altitude 2000 ft.) on July 5, 1920. Mr. William Brewster also discovered a pair with a nest containing six young at Glendale in Stockbridge, June 28, 1902 (Auk, XXVI, 1909, pp. 310–311).

P. 126 [20]. **Oporornis agilis** (Wils.). CONNECTICUT WARBLER.—Add to the records, Lanesborough, Sept. 30, 1900.

P. 126 [20]. **Wilsonia pusilla** (Wils.). WILSON'S WARBLER.—Extend the autumnal migration dates to Sept. 30.

P. 127 [21]. **Vireosylva gilva gilva** (Vieill.). WARBLING VIREO.—Seen as late as Sept. 24 in Lanesborough, 1900.

P. 128 [22]. **Lanius ludovicianus migrans** Palmer. MIGRANT SHRIKE.—Mr. Gerald H. Thayer reports seeing one in Lanesborough, Aug. 18, 1900 (Auk, XIX, 1902, p. 296), in a hillside pasture above Berkshire Village. This is the first record since Mr. S. G. Tenney's discovery of three nests in Williamstown in 1883 and 1886. The junior author of these 'Notes' saw one in Stockbridge in the month of August.

P. 130 [24]. **Stelgidopteryx serripennis** (Aud.). ROUGH-WINGED SWALLOW.—Since the publication of the 'Birds of Berkshire' the Rough-winged Swallow has been reported by Mr. William Brewster from Glendale in the township of Stockbridge, where he found a pair with three full-grown young, July 3, 1906 (Auk, XXIV, 1907, pp. 221–222). The junior author also observed it in the adjoining town of West Stockbridge in the summer of 1919. During a trip to Berkshire, May 28–30, 1910, Mr. C. J. Maynard found a pair nesting in an old Kingfisher's hole near the top of a bank about twenty feet high on the road at the lower end of Pontoosuc Lake, Pittsfield, and Judge Charles F. Jenney saw two near the same place on the 7th of

June, 1911 (Maynard's Record of Walks and Talks with Nature, III, 1910, p. 122, IV, 1911, p. 171).

P. 130 [24]. **Hesperiphona vespertina vespertina** (Cooper). EVENING GROSBEAK.—We have been advised of the occurrence of this bird in Lee and Williamstown (Caroline R. Leake, Bird-Lore, XI, 1909, p. 85) during the winter of 1908–09; in South Sandisfield in December, 1913 (F. Walters, *in litt.*); and in Stockbridge in early April, 1916.

P. 131 [25]. **Loxia leucoptera** Gmel. WHITE-WINGED CROSSBILL.—This bird is occasionally seen in summer as well as in winter. Mr. Gerald H. Thayer reports that a flock of five or six individuals stayed in Lanesborough as late as the 4th of June, in the year 1900 (Auk, XIX, 1902, p. 297), and we found one in full song in the coniferous forest of Mt. Greylock in August, 1911.

P. 133 [27]. **Passerherbulus henslowi henslowi** (Aud.). HENSLOW'S SPARROW.—Add to the list of towns in what we have found this bird breeding, Peru, Cheshire, and Savoy. Mr. R. H. Howe, Jr., has reported it from Williamstown also (Auk, XIX, 1902, p. 404).

P. 133 [27]. **Zonotrichia albicollis** (Gmel.). WHITE-THROATED SPARROW.—What was said above concerning the extension of the breeding area of *Dendroica magnolia* southward and into the valleys of Berkshire during the last ten years is equally true of the White-throated Sparrow. It was found generally distributed in South Sandisfield in the summer of 1912, and in the Housatonic Valley towns in the summer of 1917 and 1919. It has been known to summer even to the south of Berkshire, in Litchfield and Winsted, Litchfield Co., Conn. (Woodruff, Auk, XXIII, 1906, p. 461; Sage and Bishop, Birds of Connecticut, 1913, p. 129)[1]

P. 136 [30]. **Dolichonyx oryzivorus** (Linn.). BOBOLINK.—Seen as late as Sept. 17 in Stockbridge.

Sturnus vulgaris Linn. STARLING.—The European Starling is now generally distributed, as a permanent resident, through the Housatonic Valley towns. It was introduced into New York City in 1890, and about one hundred were liberated in Springfield, Mass., in 1897 (Morris, Birds of Springfield and Vicinity, 1901, p. 42). The Berkshire birds appear to have invaded the County from the South by way of the Housatonic River valley.

P. 138 [32]. **Otocoris alpestris alpestris** (Linn.). HORNED LARK.—A flock is reported to have spent several weeks in Stockbridge village during the winter of 1915–16.

P. 138 [32]. **Otocoris alpestris praticola** Hensh. PRAIRIE HORNED LARK.—Add Stockbridge to the towns in which this bird breeds.

P. 140 [34]. **Empidonax flaviventris** (W. M. & S. F. Baird). YELLOW-BELLIED FLYCATCHER.—Spring migration, May 22-June 2 (Lanesborough, 1901).

---

[1] *Guiraca caerulea* (Linn.). BLUE GROSBEAK. Professor S. F. Clarke tells us that he had four of these birds in his grounds in Williamstown in the month of October. This is the only record for the County of Berkshire.

P. 140 [34]. **Nuttallornis borealis** (Swains.). OLIVE-SIDED FLYCATCHER.—Seen as late as Sept. 7 at Bash Bish Falls, Mount Washington.

P. 141 [35]. **Myiarchus crinitus** (Linn.). CRESTED FLYCATCHER.—Seen up to Sept. 17 in Stockbridge.

P. 142 [36]. **Sphyrapicus varius varius** (Linn.). YELLOW-BELLIED SAPSUCKER.—Add, Ward Pond, Becket, one female, July 12, 1909.

P. 143 [37]. **Coccyzus americanus americanus** (Linn.). YELLOW-BILLED CUCKOO.—Arrived in Lanesborough, May 12, 1911; seen up to Sept. 29.

P. 144 [38]. **Cathartes aura septentrionalis** Wied. TURKEY VULTURE.—At least one more Turkey Vulture has been killed in Berkshire County since 1900. In the 'Boston Globe' newspaper of July 15, 1905, there is a notice of one that was shot in Becket "recently" by William A. Schlesinger and presented to the Museum of Natural History in Springfield, Mass., and in 'The Auk' for October, 1905, p. 413, Mr. Robert O. Morris records a young specimen killed by Walter Stanley in Becket on the 8th of June, 1905, and sent to the Museum of Natural History in Springfield.

Possibly both of these records refer to the same bird, although the name of the collector is different in the two cases.

P. 145 [39]. **Astur atricapillus atricapillus** (Wils.). GOSHAWK.—Mr. Gerald H. Thayer (Auk, XIX, 1902, p. 296) reports seeing a large young Goshawk fly past him on the eastern side of Hoosac Mountain, within the limit of Berkshire County, on the 15th of August, 1900. It is doubtful whether, under the circumstances, Mr. Thayer could clearly discriminate between a Goshawk and a large female Cooper's Hawk (*Accipiter cooperi* Bonap.); we therefore reject this as a valid summer record for the former species.

P. 146 [49]. **Buteo platypterus** (Vieill.) BROAD-WINGED HAWK.—The junior author saw one at Ward's Pond, Becket, on the 12th of July, 1909, and discovered a nest containing young in Stockbridge. We also observed it in Lanesborough on the 30th of April, 1911.

P. 147 [41]. **Falco peregrinus anatum** Bonap. DUCK HAWK.—Has been found nesting in Cheshire by Mr. Gerald H. Thayer, and near Bash Bish Falls, Mount Washington by the junior author.

Phasianus torquatus Gmel. RING-NECKED PHEASANT.—This introduced species is now well established in Berkshire County.

P. 149 [43]. **Oxyechus vociferus** (Linn.). KILLDEER.—Add to the records, West Stockbridge, June 22, 1919, a pair with (apparently) one young.

P. 151 [45]. **Bartramia longicauda** (Bechst.). UPLAND PLOVER.—The senior author found this bird in Lanesborough, May 30, 1901. R. H. Howe, Jr. (Auk, XIX, 1902, p. 404) saw seven pairs in Williamstown, June 17–22, 1912, and F. G. and M. C. Blake told him that they saw four on June 19, 1900, and two on June 15, 1901, in Williamstown. The junior author saw one in Lenox, Aug. 9, 1919. The above dates prove conclusively that

the Upland Plover breeds in Berkshire, for it has eggs by May 25 and its young are hatched by June 4, on Martha's Vineyard, according to O. Durfee (Auk, XX, 1903, p. 65).

P. 152 [46]. **Porzana carolina** (Linn.). SORA.—Add, Pittsfield, June, 1901.

Herodias egretta (Gmel.). EGRET.—Three were seen by the junior author, August 8, 1919, in the pond (so-called) formed by the Housatonic River at the Lenox railway station. A farmer's boy declared that they had been there two or three weeks. Sole record for the County.

Ixobrychus exilis (Gmel.). LEAST BITTERN.—The Least Bittern is to be added to the list of summer birds of Berkshire. Mr. Schurr has found it in Pittsfield and the junior author of this paper discovered one at the head of the Stockbridge Bowl in August, 1914.

P. 157 [51]. **Larus argentatus** (Pont.). HERRING GULL.—According to a communication to a local newspaper, a flock of Herring Gulls, rare birds in Berkshire, spent several days along the Housatonic River and its flooded meadows in Stockbridge during the winter of 1915–16.

P. 157 [51]. **Podilymbus podiceps** (Linn.). PIED-BILLED GREBE.—This bird breeds also in Stockbridge, and at Lenox Station.

P. 158 [52]. **Colymbus holboelli** (Reinh.). HOLBOELL'S GREBE.—A specimen in the Science building, Springfield, Mass., was taken alive in Otis "a few winters ago," according to R. O. Morris (Birds of Springfield and Vicinity, 1901, p. 6). Another was captured alive at Yocum Pond, Becket, Feb. 18, 1904 (R. O. Morris, in litt.). A third was found on March 4th, 1912, in South Sandisfield, by Frank Walters, and given by him to the Museum of the Berkshire Historical and Scientific Society of Pittsfield. The gift was accompanied by the following interesting letter from Mr. Walters which was printed in the 'Berkshire Eagle,' a Pittsfield newspaper, shortly afterwards:—

Mr. H. H. Ballard,
Pittsfield, Mass.

DEAR SIR:—I am sending you to-day by express a specimen of Holboell's Grebe. About five o'clock on the afternoon of Monday, March 4, I was crossing a bridge over a little brook tributary to Sandy Brook, and a little over a mile north of the Massachusetts-Connecticut state line on the road leading from South Sandisfield, Mass., to Norfolk, Conn., and happening to glance down, I saw about twenty-five feet away a bird sitting on the ice. It allowed me to approach within five or six feet of it and then plunged suddenly into the water. This open stretch of water was on an average only about two feet in width and possibly twenty feet long. It swam to the upper end of this and turning came back to where it had taken to the water. As it came to the surface for air, I dropped my cap over its head and lifted it from the water.

I wish to state, in passing, that this bird used its wings continually while swimming, using them much in the same manner as if in the air. Mr.

Chapman and others have stated that grebes use the feet only in swimming. While the bird was in the water I ran along the edge of the ice and had an excellent opportunity to observe this use of the wings, as the bird was almost at my feet. I found also that they have the heron-like habit of striking directly at a person's eye when captured. Finding that he could not reach my face, he then tried to strike the buttons off my coat.

On reaching home, I identified this bird as Holboell's Grebe and you will find that its measurements indicate it to be fair average size. While the bird is in winter plumage, you will note the many reddish spots on its neck.

After exhibiting it to some people in the vicinity, I returned it to the spot where I found it, twenty-four hours after its capture. That night, however, the thermometer dropped to several degrees below zero, and on March 6 at 2.30 P. M., I went to the brook to see if the bird was still there and found it frozen into the ice and of course dead. I had to get a stick and smash the ice to get the bird out. I think you will agree with me that it is a nice specimen, not having been shot or otherwise injured.

I would be glad to see it added to the collection of birds in the museum of which I understand you are curator.

Mr. Walter's is the seventh specimen of Holboell's Grebe recorded for Berkshire County. All of them were captured either in the winter or early spring.

Carpenteria, Calif.

NOTES ON NORTH AMERICAN BIRDS.

XI.

BY HARRY C. OBERHOLSER

The following notes on seven North American birds[1] have been made during the course of other investigations, and are here published as of possible interest to other ornithologists. They concern species of the families Charadriidae, Bubonidae, Laniidae, and Vireonidae.

[1] For previous papers in this series, *cf.* 'The Auk,' XXXIV, April, 1917, pp. 191–196; XXXIV, July, 1917, pp. 321–329; XXXIV, October, 1917, pp. 465–470; XXXV, January, 1918, pp. 62–65; XXXV, April, 1918, pp. 185–187; XXXV, October, 1918, pp. 463–467; XXXVI, January, 1919, pp. 81–85; XXXVI, July, 1919, pp. 406–408; XXXVI, October, 1919, pp. 556–559; XXXVIII, January, 1920, pp.

Charadrius nivosus (CASSIN).

The bird described by Cassin as *Aegialitis nivosa*[1] has by most recent authors been considered a distinct species. It is very similar in general appearance to *Charadrius alexandrinus alexandrinus* (Linnaeus), but differs chiefly in having the lores wholly white (instead of with a black line from the eye to the bill), and the rufous of the pileum less pronounced in fully adult plumage. Examination of a large series of birds of this species shows, however, that the characters distinguishing these two forms are not constant. That of the rufous of the head is too changeable to be of much value in the determination of specimens, so that the color of the lores is much the best character. But even this varies to such an extent that it is impossible to find any definite line of demarcation between the two forms. Specimens of the American *Charadrius nivosus* occur with partly black lores, and of the Old World *Charadrius alexandrinus* with nearly white lores. In view of these facts, it is of course, inadvisable to maintain the specific distinction of *Charadrius nivosus*. It, therefore, should be regarded as a subspecies of *Charadrius alexandrinus*. It is interesting to note that this is the view taken many years ago by Mr. Henry Seebohm,[2] as well as by some recent authors. Mr. Ridgway has recently separated[3] the American birds into two races; so that our Snowy Plovers should now stand as *Charadrius alexandrinus nivosus* (Cassin), and *Charadrius alexandrinus tenuirostris* (Lawrence).

Cryptoglaux funerea magna (BUTURLIN).

A few years ago a specimen of *Cryptoglaux funerea funerea* (Linnaeus) was reported from the Pribilof Islands, Alaska, as the first record of this bird for North America.[4] A recent examination of this specimen shows conclusively that it belongs, not to the typical form native of Europe, but to the more recently described race, *Cryptoglaux funerea magna* Buturlin.[5]

---

[1] Rep. Explor. and Surv. R. R. Pac., IX, 1858, p. 696 (Presidio, near San Francisco, California).

[2] Geographical Distribution of the Charadriidae, 1887, p. 171.

[3] Bull. U. S. Nat. Mus., No. 50, part VIII, 1919, pp. 136–140.

[4] Evermann, The Auk, XXX, No. 1, January, 1913, p. 18.

[5] *Nycta lamagna* Buturlin, Psovaia i Ruzheinaja Okhota, 1907, No. 6, March, 1907; Ornith. Monatsber., XV, No. 5, May, 1907, p. 80 (Kolyma River at N. Lat. 68° 40′, northeastern Siberia).

This is a very pale race and the largest of all the subspecies of *Cryptoglaux funerea*. Geographically it is near Alaska, for it inhabits the extreme northeastern part of Siberia. The North American specimen above mentioned is perfectly typical and measures as follows: wing, 185.5; tail, 115; bill without cere, 15.5; tarsus, 30 mm. It is an adult female, No. 239184 of the United States National Museum collection, and was taken on St. Paul Island, Pribilof Islands, Alaska, January 26, 1911, by Mr. Walter L. Hahn. By reason of this change, *Cryptoglaux funerea funerea* (Linnaeus) must be replaced as a North American bird by *Cryptoglaux funerea magna* (Buturlin).

Asio otus wilsonianus (LESSON).

Some time since the present writer had occasion to investigate the subspecific status of *Asio otus wilsonianus* (Lesson).[1] This owl has for many years been commonly considered a distinct species, although known to be more or less closely related to *Asio otus* (Linnaeus)[2] of Europe. Even a cursory examination of a good series of both these birds shows that they are more intimately connected than has been supposed. The principal differences separating *Asio wilsonianus* from *Asio otus* consist in the darker upper parts, on which the blackish areas are more confusedly mottled with less inclination to a striped appearance; the less conspicuous ochraceous suffusion of both upper and lower surfaces; the rather more heavily streaked breast; and more heavily barred posterior lower parts. Although in size the two birds are alike, there is a great range of individual variation in the plumage of *Asio otus*, involving the existence of at least four color phases, these being a light and a dark ochraceous phase, and a light and a dark gray phase. The characteristics separating *Asio wilsonianus* are most striking when compared with the light ochraceous phase of *Asio otus*, but many specimens of the latter in the dark phase are not so different. In fact, not a few of the specimens in the series of *Asio otus* examined would be practically indistinguishable if placed, with their labels removed, among the American birds. While, of course, it is true that the average differences indicate

[1] *Otus wilsonianus* Lesson, Traité d'Ornith., 1830, p. 110 (New York).
[2] *Strix otus* Linnaeus, Syst. Nat., ed. 10, 1, 1758, p. 92 (Sweden).

that the two forms are readily separable, the two characters most relied upon—the darker and more confusedly mottled upper surface of the American bird, and its more heavily barred posterior lower parts—are not constant. In fact, in those respects we can find some examples of *Asio otus* from England and some from China that are but very slightly or not at all different from specimens of *Asio wilsonianus* taken in Utah, Nevada, and even the District of Columbia. The latter bird is still more like *Asio otus canariensis* Madarász. All of this of course, goes to prove that *Asio wilsonianus* is but a subspecies of *Asio otus*, as Dr. Ernst Hartert has recently claimed.[1] The American bird, therefore, should hereafter be called *Asio otus wilsonianus* (Lesson).

Scotiaptex nebulosa nebulosa (FORSTER).

In his recent account of the forms of the genus *Scotiaptex*, Mr. Robert Ridgway concludes[2] that the specimens of the Great Gray Owl from Alaska formerly identified as *Scotiaptex nebulosa lapponica* are but light-colored examples of *Scotiaptex nebulosa nebulosa* (Forster). A recent study of available material fully confirms Mr. Ridgway's opinion, which indicates that *Scotiaptex nebulosa lapponica* should be expunged from our North American list. The specimens from the delta of the Yukon River on which the North American record of this form was formerly based, are futhermore, no lighter than birds from Alberta in the collection of the Biological Survey in the United States National Museum, and are not to be distinguished subspecificially by either size or color from *Scotiaptex nebulosa nebulosa*. They are not even different enough to be considered intermediate between *Scotiaptex nebulosa nebulosa* and *Scotiaptex nebulosa barbata* (Pallas) from northeastern Siberia. In fact, the distinctness of *Scotiaptex nebulosa barbata* from *Scotiaptex nebulosa lapponica* of northern Europe is somewhat questionable, as the alleged differences appear to be based on individual or other unimportant conditions of plumage. We have not, however, examined a sufficient series from eastern Siberia definitely to settle this question even to our own satisfaction. A specimen from Verkhni Kloymsk in the Kolyma region of northeastern

[1] Vögel Paläarkt. Fauna, Heft VIII (Band II, Heft 2), Aug., 1913, p. 987.
[2] Bull. U. S. Nat. Mus., No. 50, VI, 1914, p. 635.

Siberia, recently recorded by Mr. J. H. Riley as *Scotiaptex nebulosa barbata*.[1] does not, so far as we can see, differ appreciably in any significant respect from *Scotiaptex nebulosa lapponica*.

Lanius ludovicianus mearnsi RIDGWAY.

The Shrike described as *Lanius ludovicianus mearnsi* by Mr. Ridgway[2] has not been recognized by recent authors. This has been due, apparently, to the supposition that the color of the upper tail-coverts was the principal, if not the only, character to separate *Lanius ludovicianus mearnsi* from *Lanius ludovicianus anthonyi* of Santa Cruz Island, California, and that this character was inconstant. Size was mentioned by Mr. C. B. Linton[3] as another supposed distinction, but this was not claimed by the original describer, as may be seen by reference to his description[4], since the present form was there not compared with *Lanius ludovicianus anthonyi*, but with *Lanius ludovicianus mexicanus*. Examination of a good series of both island forms from San Clemente and Santa Cruz islands shows that there are, however, excellent characters to distinguish *Lanius ludovicianus mearnsi*. The trenchantly white upper tail-coverts of *Lanius ludovicianus mearnsi* are an excellent average difference, even if not reliable in every individual, for the rump and upper tail-coverts in *Lanius ludovicianus anthonyi* are nearly always gray, sometimes pale, sometimes almost as dark as the lower back. Furthermore, *Lanius ludovicianus mearnsi* differs from *Lanius ludovicianus anthonyi* in somewhat darker upper parts, much more whitish lower surface, much more strikingly and extensively whitish scapulars, and much larger white spot on the base of the primaries. Birds from Santa Catalina Island, California, are intermediate, but without much doubt properly referable to *Lanius ludovicianus anthonyi*. All records of *Lanius ludovicianus mearnsi* from Lower California[5] belong probably to

[1] Proc. U. S. Nat. Mus., LIV, 1918, p. 617.
[2] *Lanius ludovicianus mearnsi* Ridgway, Proc. Biol. Soc. Wash., XVI, September 30, 1903, p. 108 (San Clemente Island, California).
[3] Condor, X, No. 4, August 28, 1908, p. 182.
[4] Ridgway, *loc. cit.*
[5] Ridgway, Bull. U. S. Nat. Mus., No. 50, III, 1904, p. 252.

other races, mostly to *Lanius ludovicianus nelsoni*.[1] The ranges of these two island forms are, therefore, as follows:

Lanius ludovicianus anthonyi: Santa Cruz, Santa Barbara, Anacapa, Santa Catalina, and probably Santa Rosa, islands, California.

Lanius ludovicianus mearnsi: San Clemente Island, California.

Vireo huttoni obscurus ANTHONY

Vireo huttoni obscurus was originally described by Mr. A. W. Anthony,[2] from a specimen obtained by him at Beaverton, Oregon. It is currently regarded as a dark form of *Vireo huttoni* from the Pacific Coast region of the northwestern United States and southwestern British Columbia. Its distinctness from *Vireo huttoni huttoni* was many years ago questioned by Mr. S. N. Rhoads,[3] and more recently by Anderson and Grinnell.[4] This vireo is not common in collections, and during the past ten years the writer has taken pains to examine carefully all specimens that have passed through his hands. Enough material has now accumulated from the States of Washington and Oregon to show that in neither breeding nor winter plumage is there the slightest difference in either size or color between the vireos of this species from these two States and those from southern California. The bird at present known as *Vireo huttoni obscurus* Anthony must therefore be synonymized with *Vireo huttoni huttoni* Cassin, and the range of the latter extended at least to northwestern Washington.

The large series of *Vireo huttoni* now available shows that this species is subject to great individual variation, which authors, including the writer, have not hitherto taken sufficiently into account. There are in this species two well-marked color phases which are not due to age, sex, or season. In one the upper parts are very decidedly greenish; in the other grayish, with little or no trace of olive green. Specimens of the latter character were

[1] *Lanius ludovicianus nelsoni* Oberholser, Condor, XX, No. 6, December 12, 1918, p. 209.

[2] Zoe, I, December, 1890 (January, 1891), p. 308.

[3] The Auk, X, No. 3, July, 1893, pp. 238–241.

[4] Proc. Acad. Nat. Sci. Phila., 1903, p. 12.

the basis of *Vireo huttoni oberholseri* Bishop, for the separation of which the present writer was unfortunately at least in part responsible. Of each of these two color phases there are also two patterns of coloration; one in which the upper parts are uniform, and the other in which the pileum is distinctly darker and usually more grayish, forming a well-defined cap. There are thus at least four fairly distinct styles of coloration, all of which might perhaps well be called phases. All are connected by various kinds of intermediates. There is, in addition to these color phases, also a great range of difference in the general shade of coloration on the upper parts, and unusually dark specimens have been apparently responsible for the supposed distinctness of *Vireo huttoni obscurus*. Birds in worn plumage are usually darker, duller, and somewhat less greenish above.

Vireo huttoni insularis RHOADS.

The Vireo described by Mr. S. N. Rhoads as *Vireo huttoni insularis*[1] has commonly been considered a synonym of *Vireo huttoni obscurus* Anthony. Since, however, as above shown, the latter is not separable from *Vireo huttoni huttoni*, it would seem as a matter of course that *Vireo huttoni insularis* would become a synonym of *Vireo huttoni huttoni*. In order, however, to make sure of this matter, the types now in the Provincial Museum of Victoria, British Columbia, together with all the other available material from Vancouver Island, including some specimens not seen by Mr. Rhoads when he described *Vireo huttoni insularis*, have been examined. Unfortunately for the status of *Vireo huttoni insularis*, none of the Vancouver Island or other British Columbia specimens can be satisfactorily separated from California birds from the region about San Francisco Bay. The male type of *Vireo huttoni insularis*, from Victoria, British Columbia, and another specimen from the same locality, appear at first sight to be somewhat darker both above and below than California examples, but this apparent difference is readily traceable to some accidental soiling of the plumage. These facts, together with the lack of any differences shown by other specimens from Vancouver Island, take away all the present claim that *Vireo huttoni insularis* has for recognition as a subspecies. It, therefore, should be considered a synonym of *Vireo huttoni huttoni*, and the range of that form thereby extended to include Vancouver Island.

[1] The Auk, X, No. 3, July, 1893, p. 239.

BIRD DISTRIBUTION IN EASTERN KENTUCKY.

BY R. E. HORSEY.

I HAVE had the pleasure during the past fifteen years of spending from ten days to three weeks, Spring and Fall in botanical collecting for our Rochester, New York, Parks, under the direction of Prof. C. S. Sargent, Director of the Arnold Arboretum, Harvard University, who receives duplicates of all the botanical specimens, seeds and plants obtained.

My interest in birds during the past eight years has led me to carefully record all that I have seen, having my bird glass handy at all times. My field for the past two years was eastern Kentucky including also a few visits across the Ohio River while studying the arborescent flora of Ohio.

In Kentucky along the Ohio River the country is more or less hilly but soon flattens out as one leaves the river in Greenup, Kenton and Boyd Counties, while in Clark and Madison Counties, the famous Blue Grass Region, it is level or rolling except along the Kentucky River where there are a few low hills. This however is all changed in passing to the southeast where we enter the hills, beautiful in their never ending variety of valleys and abrupt ridges clothed with forests of oak, maple, hickory and pine, edged with sassafras, and undergrown with dogwood and sumac, making a riot of color in the Autumn. The hill country of Johnson, Pike, Letcher, Breathitt and Lee Counties while an excellent place to pursue the study of the arborescent flora, is not so favorable for the ornithologist. The brushy pastures and stream sides of the level counties give the largest number of species of birds, but to me those of the hills are the most interesting because of their elusiveness.

The difference in elevation in eastern Kentucky affords a fine field for the study of plant distribution and this is true of bird life also. One striking example of trees is furnished by the Buckeyes; the Ohio Buckeye (*Aesculus glabra*) being the tree of the open country while the Sweet Buckeye (*Aesculus octandra*) is found only in the hills. Of course some trees may be found generally distributed also. The following notes will show the same differ-

ences in bird distribution, and as I hope to pay special attention to the hills and mountains of southeastern Kentucky during the year 1921 I trust I shall be able to throw still further light on this subject.

Podilymbus podiceps. PIED-BILLED GREBE.—One in a small pond west of Winchester, Clark Co. September 23, 1920.

Butorides virescens virescens. GREEN HERON.—One and two in Clark and Madison Counties, May and September.

Pisobia maculata. PECTORIAL SANDPIPER.—Four migrants in a wet meadow, Clark Co., May 13, 1920.

Actitis macularia. SPOTTED SANDPIPER.—One along the river in Breathitt Co. May 21, 1920.

Oxyechus vociferus. KILLDEER.—Fairly common in May, Clark and Madison Counties with thirty noted in Clark Co., September 23, 1920.

Zenaidura macroura carolinensis. MOURNING DOVE.—Noted in May, one to four birds, Clark, Madison and Boyd Counties.

Cathartes aura septentrionalis. TURKEY VULTURE.—One to six birds, Greenup, Clark, Madison and Pike Counties, spring and fall.

Circus hudsonius. MARSH HAWK.—One May 15, 1920, Madison Co.

Accipiter cooperi. COOPER'S HAWK.—One May 14, 1920, Madison Co.

Falco sparverius sparverius. SPARROW HAWK.—This useful small hawk noted a number of times in Greenup, Clark and Madison Counties but never more than two birds at a time.

Otus asio asio. SCREECH OWL.—One startled from a thicket May 15, 1920, Madison Co.

Coccyzus erythrophthalmus. BLACK-BILLED CUCKOO.—One May 11, 1920, Clark Co., and a dead bird found in the wooded hills May 19, 1920, Breathitt Co.

Ceryle alcyon alcyon. BELTED KINGFISHER.—One along a mountain stream in Letcher Co., October 4, 1920.

Dryobates villosus subsp.? HAIRY WOODPECKER.—One May 13, 1920, Clark Co.

Dryobates pubescens medianus. DOWNY WOODPECKER.—Two of these birds were noted May 18, 1920, in Breathitt Co. and as they were among the hills I believe they were the northern subspecies.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER.—A fairly common bird in Clark, Madison and Boyd Counties, two were also noted among the hills in Breathitt Co., October 7, 1920.

Centurus carolinus. RED-BELLIED WOODPECKER.—In May recorded two in Clark and one in Madison Counties.

Colaptes auratus subsp.? FLICKER.—Of general distribution in eastern Kentucky, found in both the open counties and in the hills.

Chordeiles virginianus virginianus. NIGHTHAWK.—Noted twice in May, Madison Co.

Chaetura pelagica. CHIMNEY SWIFT.—A common summer bird throughout eastern Kentucky.

Archilochus colubris. RUBY-THROATED HUMMINGBIRD.—Observed in May in Boyd and Pike Counties.

Tyrannus tyrannus. KINGBIRD.—Recorded in May, Clark and Madison Counties.

Myiarchus crinitus. CRESTED FLYCATCHER.—Two birds May 19, 1920, in the wooded hills, Breathitt County.

Sayornis phoebe. PHOEBE.—In Clark, Madison and Boyd Counties.

Myiochanes virens. WOOD PEWEE.—Evidently a well distributed summer resident in eastern Kentucky.

Empidonax flaviventris. YELLOW-BELLIED FLYCATCHER.—One on May 12, 1919, Boyd Co.

Empidonax minimus. LEAST FLYCATCHER.—One on May 11, 1920, Clark Co.

Cyanocitta cristata cristata. BLUE JAY.—Fairly common in Spring, Clark, Madison and Johnson Counties.

Corvus brachyrhynchos brachyrhynchos. CROW.—Common in the Blue Grass Region and along the Ohio River but among the hills, only met in an open place planted in corn, Pike Co.

Dolichonyx oryzivorus. BOBOLINK.—Eight, May 13, 1920, Clark Co. and four September 16, 1920, Madison Co.

Molothrus ater ater. COWBIRD.—From one to three birds noted in spring, Kenton, Clark and Pike Counties.

Agelaius phoeniceus phoeniceus. RED-WINGED BLACKBIRD.—In suitable locations in Clark, Madison and Boyd Counties. A few in May with flocks from 500 to 1,000 in September and October.

Sturnella magna subsp.? MEADOWLARK.—Common in Kenton, Clark and Madison Counties but not seen in the hill counties.

Quiscalus quiscula aeneus. BRONZED GRACKLE.—Common in Kenton, Clark, Madison and Boyd Counties but only noted in the hills in Johnson Co. where there are a considerable number of open fields.

Astragalinus tristis tristis. GOLDFINCH.—Noted in May as a common bird in eastern Kentucky.

Passer domesticus. ENGLISH SPARROW.—This bird is well established in eastern Kentucky.

Passerculus sandwichensis savanna. SAVANNAH SPARROW.—Two birds only, May 13, 1920, Clark Co.

Zonotrichia leucophrys leucophrys. WHITE-CROWNED SPARROW.—Two May 12, 1919, in Boyd Co. and one May 13, 1920, Clark Co.

Zonotrichia albicollis. WHITE-THROATED SPARROW.—One bird Clark Co, May 12, 1920.

Spizella passerina passerina. CHIPPING SPARROW.—A common summer resident in the eastern portion of the state.

Spizella pusilla pusilla. FIELD SPARROW.—Noted in May, in Boyd, Clark, Madison and Lee Counties but not more than four at a time.

Melospiza melodia melodia. SONG SPARROW.—Common in all counties visited.

Pipilo erythrophthalmus erythrophthalmus. TOWHEE OR CHEWINK.—This brush-loving bird was noted only in Kenton and Boyd Counties.

Cardinalis cardinalis cardinalis. CARDINAL.—Fairly common in eastern Kentucky.

Zamelodia ludoviciana. ROSE-BREASTED GROSBEAK.—One only May 12, 1920, Clark Co.

Passerina cyanea. INDIGO BUNTING.—Noted in May as a common bird.

Spiza americana. DICKCISSEL.—The only bird of this species I ever met with was perched on a low hedge bordering a pasture in the Blue Grass Region, and I was very fortunate in having an intimate study of him at close quarters. May 13, 1920, Clark Co.

Piranga erythromelas. SCARLET TANAGER.—A male in fine plumage, May 19, 1919, Breathitt Co. Tanagers, immature or female were also noted at times but I could not satisfy myself whether they were Scarlet or Summer Tanagers.

Progne subis subis. PURPLE MARTIN.—It is a pleasure to note the numbers of these birds in Eastern Kentucky, especially as they are barely holding their own in two small colonies in Monroe Co., N. Y. where I am at home.

Hirundo erythrogastra. BARN SWALLOW.—Fairly common in Greenup, Clark and Madison Counties.

Stelgidopteryx serripennis. ROUGH-WINGED SWALLOW.—A few noted in May; Madison, Lee, Johnson and Pike Counties. In Johnson Co. they were flying in and out of nesting holes in a cliff of crumbling stone only five or six feet above the roadway along Paint Creek.

Bombycilla cedorum. CEDAR WAXWING.—Twenty-five birds, May 12, 1920, in Clark Co. with several September 29, 1920, in Boyd Co.

Vireosylva olivacea. RED-EYED VIREO.—In the wooded hills during May, Johnson, Pike, Breathitt and Lee Counties with one record only in the open portion in Clark Co.

Vireosylva gilva gilva. WARBLING VIREO.—One on May 13, 1919, Boyd Co. and two May 19, 1920, Breathitt Co.

Lanivireo flavifrons. YELLOW-THROATED VIREO.—Two birds, Kenton Co., May 10, 1920.

Mniotilta varia. BLACK AND WHITE WARBLER.—May 12, 1920, Clark Co., May 20, 1920, Lee Co. and September 26, 1920, Madison Co. One bird at a time.

Dendroica aestiva aestiva. YELLOW WARBLER.—A few in May in about all counties visited.

Dendroica caerulescens caerulescens. BLACK-THROATED BLUE WARBLER.—One October 5, 1920, Letcher Co.

Dendroica coronata. MYRTLE WARBLER.—One September 6, 1920, Madison Co.

Dendroica magnolia. MAGNOLIA WARBLER.—May 11, 1920, Clark Co.

Dendroica pensylvanica. CHESTNUT-SIDED WARBLER.—Kenton Co., May 10, 1920, and Madison Co., May 14, 1920.

Dendroica castanea. BAY-BREASTED WARBLER.—September 29 and October 1, 1920, Boyd Co.

Dendroica striata. BLACK-POLL WARBLER.—May 13, 1920, Clark Co.

Dendroica fusca. BLACKBURNIAN WARBLER.—May 12 and 13, 1920, Clark Co.

Dendroica virens. BLACK-THROATED GREEN WARBLER.—Boyd Co. May 12, 1919.

Dendroica discolor. PRAIRIE WARBLER.—Boyd Co., May 11, 1919.

Seiurus noveboracensis noveboracensis. WATER-THRUSH.—Two May 19, 1920, Breathitt Co.

Geothlypis trichas trichas. MARYLAND YELLOW-THROAT.—Well distributed in all Eastern Kentucky, noted in May.

Icteria virens virens. YELLOW-BREASTED CHAT.—In May and September, Boyd, Clark and Madison Counties.

Wilsonia citrina. HOODED WARBLER.—October 5, 1920, Letcher Co.

Setophaga ruticilla. REDSTART.—Noted in most counties visited from May 10 to 19.

Mimus polyglottos polyglottos. MOCKINGBIRD.—Clark, Madison and Pike Counties.

Dumetella carolinensis. CATBIRD.—Common in Eastern Kentucky.

Toxostoma rufum. BROWN THRASHER.—In May several in the level counties but only noted in the hills in Lee Co., May 20, 1920.

Thryothorus ludovicianus ludovicianus. CAROLINA WREN.—Fairly common in all counties visited.

Thryomanes bewicki bewicki. BEWICK'S WREN.—I had the pleasure of my first acquaintance with this sprite in tangled underbrush near the Ohio River, Greenup Co., May 24, 1917, one was also noted May 12, 1920, Clark Co.

Troglodytes aedon aedon. HOUSE WREN.—Noted in May, Greenup, Kenton and Johnson Counties.

Baeolophus bicolor. TUFTED TITMOUSE.—Among the wooded hills in Pike and Breathitt Counties. Noted in May.

Penthestes carolinensis carolinensis. CAROLINA CHICKADEE.—Two at a time noted in May, Greenup, Johnson, Clark and Madison Counties and October 3, 1920 Pike Co.

Hylocichla mustelina. WOOD THRUSH.—Noted in May, Greenup, Kenton and Boyd Counties in the low wooded hills along the Ohio River as well as in Johnson, Pike and Breathitt Counties in the true hill country.

Hylocichla fuscescens fuscescens. VEERY OR WILSON'S THRUSH.—May 24, 1917, Greenup Co., May 12, 1919, Boyd Co., May 12, 1920, Clark Co. and May 14, 1920, Madison County.

Hylocichla ustulata swainsoni. OLIVE-BACKED THRUSH.—May 19, 1920, among the hills in Breathitt Co.

Planesticus migratorius migratorius. ROBIN.—A common bird May 8 to 23 and September 23 to 26, in the level counties but three only seen about the town of Jackson, Breathitt Co., May 19, 1920, and not found elsewhere in the hills

Sialia sialis sialis. BLUEBIRD.—Several noted in about all counties visited.

Highland Park, Reservoir Ave., Rochester, N. Y.

A NEW BURROWING OWL FROM COLOMBIA.

BY WITMER STONE.

IN a collection of Colombian birds recently received by the Academy of Natural Sciences of Philadelphia from Mr. M. A. Carriker, Jr., are two specimens of a Burrowing Owl which appear to represent an undescribed form.

They are nearest geographically to *Speotyto cunicularia tolimae* described by the writer[1] from the plains of Tolima, but curiously enough while that form is the darkest Burrowing Owl that I have seen from South America the present is among the lightest. It may be described as follows:

Speotyto cunicularia carrikeri subsp. nov.

Type. No. 73700 Coll. Acad. Nat. Sci., Philadelphia. Palmar, Boyaca, Colombia. April 24, 1917, coll. M. A. Carriker, Jr.

Description. Resembles almost exactly in general coloration specimens of *S. c. hypogaea*, from California, and similar to the large pale birds of southern South America, but it is of about the same dimensions as the small dark colored *S. c. tolimae* of Colombia.

The outermost tail feathers are white with remains of four dusky bars mainly on the outer web and reduced to a mere streak in the case of the uppermost; on the next three pairs the bars are broad and well defined on the outer web, but the inner web is largely buffy white, the distal bars sometimes partly developed. The outer feathers are equally barred on both webs.

This bird is much worn and the light spots above and on the wings are white.

The other example (No. 73699) is marked as a female and is distinctly tawny, the tail more heavily barred and all light spots on tail, wings and back, strongly suffused with tawny. There is, however, in neither specimen a suggestion of the almost chocolate brown of *S. c. tolimae.*

The type measures as follows: Wing 173 mm, tail 78, tarsus 46. exposed culmen (from cere) 14.

[1] Stone, Proc. Acad. Nat. Sci., Phila., 1899. p. 304.

THIRTY-NINTH STATED MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION.[1]

BY T. S. PALMER.

THE Thirty-ninth Stated Meeting of the American Ornithologists' Union was held at the Academy of Natural Sciences in Philadelphia, Pa., November 7–10, 1921. The business sessions on the opening day were held in the council room and the library and the public sessions on the following days in the lecture hall of the Academy. The meeting was largely attended and with excursions on Friday and Saturday occupied the entire week.

Attendance.—The total attendance of Fellows, Members, Associates and visitors was about 125. The Fellows present numbered 25 and included two Founders, Charles F. Batchelder and Dr. A. K. Fisher; the Retired Fellows were represented by Dr. W. K. Fisher and Newbold Lawrence and the Corresponding Fellows by Dr. W. L. Abbott and Mr. H. Kirke Swann; the list of Members including those elected at this meeting contained 24 names (See p. —). Among those who attended from a distance were Dr. W. K. Fisher from California, Dr. T. S. Roberts from Minnesota, W. E. Saunders, P. A. Taverner, J. H. Fleming and Hoyes Lloyd from Canada, H. Kirke Swann from London, England, and included in the list of guests were Mr. and Mrs. Adolph Burdet and Miss Burdet of Overveen, Holland.

Business meetings.—The first day was devoted to two sessions of the Council at 10.15 a. m. and 2.15 p. m.. a meeting of the Fellows at 4 p. m., and a meeting of Fellows and Members at 8.15 p. m.

By order of the Council Dr. F. A. Lucas, at his own request, was

[1] This was the sixth meeting held in Philadelphia and many changes were apparent since the Union first convened there in 1899 in a meeting memorable on account of the presence of Dr. Samuel W. Woodhouse, the founding of the research fund, and the first visit paid by the members to the home of Audubon. The Union then had 744 members, including 48 Active, 17 Honorary, 66 Corresponding and 613 Associate. Outstanding features of the program were several papers on plumages and molt, 5 papers illustrated by lantern slides and the reports of the various members of the Harriman Alaska Expedition. (See 'The Auk,' Vol. XVII, pp. 58–63). Dr. Woodhouse and nine of the members, including three Founders, who presented papers or took part in the discussions are no longer living and the number of Founders now present at a meeting is so small as to be worthy of special comment.

transferred to the list of Retired Fellows. The report of the Committee on the Brewster Memorial Medal was read and after full consideration the medal was awarded to Robert Ridgway in recognition of his work on the 'Birds of North and Middle America,' volume VIII of which was in the judgment of the Council, the most meritorious publication on the birds of America which had appeared during the past two years.

At the meeting of the Fellows four of the five vacancies were filled by the election of Dr. Glover M. Allen of Boston, Dr. W. H. Bergtold of Denver, Allan Brooks of Okanagan Landing, B. C., and James P. Chapin of New York

At the meeting of the Fellows and Members 23 Fellows and 16 Members were present. Following the roll call and reading of the minutes of the previous meeting, the report of the Secretary was presented showing that the total membership was about 1350. (For details see p. . .) The report of the Treasurer which had been verified by the auditors was then presented and showed the finances of the Union in a satisfactory condition. The number of members in arrears was less than 6 per cent. of the total number and the amount of unpaid dues was the smallest in the history of the Union.

The election of officers resulted in the re-election, with a single exception, of the officers of 1921 as follows: President, Witmer Stone; Vice presidents, George Bird Grinnell and Jonathan Dwight; Secretary, T. S. Palmer; Treasurer, W. L. McAtee; Members of the Council, A. C. Bent (vice F. A. Lucas retired), Ruthven Deane, Joseph Grinnell, H. C. Oberholser, W. H. Osgood, Charles W. Richmond, and T. S. Roberts.

On recommendation of the Council five Honorary Fellows, 14 Corresponding Fellows and 250 Associates were duly elected. In the election of 5 Members, Ohio was represented by S. Prentiss Baldwin and George L. Fordyce; Illinois by Dr. Casey A. Wood; New Jersey by Charles H. Rogers and the District of Columbia by F. C. Lincoln. Fellows, Honorary Fellows and Members are transferred from other classes while Corresponding Fellows and Associates being elected from candidates outside the Union made the actual increase in membership 264, one of the largest on record. As a result of the election there is no vacancy in the list

of Honorary Fellows, a condition which has not previously existed since 1890, the class of Fellows contains only a single vacancy, while there are 6 vacancies among the Corresponding Fellows and 8 in the class of Members.

The Committee on Biography and Bibliography through its chairman, Dr. Palmer, presented a brief report showing progress in various lines of work during the year. A bibliographical investigation of more than ordinary interest has been undertaken as a result of an inquiry from Lord Rothschild regarding the original 1848 edition of the report by Titian Peale on the Ornithology of the Wilkes Exploring Expedition. Of this celebrated work only 100 copies were published and of these only a few have been located in the United States and three abroad. Through the cooperation of Mr. Harry Harris a biographical index of 'The Ibis' covering the 60 volumes of the first ten series has been prepared and two copies in manuscript are in the hands of the Secretary. By means of this index it is possible to refer to any note in 'The Ibis' which contains biographical matter or which throws light on the activities of field collectors. The main efforts of the committee have been devoted to the preparation of the new 'Ten Year Index of The Auk,' a work which is in the hands of a special Auk Index Committee of eight members. Through the cooperation of the Biological Survey the material covering these volumes in the files of that office has been utilized as a basis. The slips containing the entries for each volume have been distributed to the members, independently checked and corrected, and most of them returned. When all of this material has been checked it will be arranged in a single alphabet and put in shape for publication.

Resolutions were adopted expressing the thanks of the Union to the Academy of Natural Sciences, the Zoological Society of Philadelphia, the Delaware Valley Ornithological Club, and to Mr. Joseph Y. Jeanes of Philadelphia for the loan of a series of original Audubon paintings for exhibition at the meetings.

Public meetings.—The meetings devoted to the presentation and discussion of scientific papers occupied the three days, November 8, 9 and 10, from 10 a. m. to 5 p.m. with an hour or more of intermission for luncheon which was served each day in the library of the Academy. The meeting on Tuesday opened with an address

of welcome by President John Cadwalader of the Academy of Natural Sciences who referred to Philadelphia and the Academy as a center of early scientific work. A brief response on behalf of the Union was made by the President, Dr. Witmer Stone. The program included 41 papers on a wide range of subjects relating mainly to American birds, including their distribution, migration, life history and nomenclature. An interesting contribution relating to Old World birds was presented in motion pictures by Mr. Adolph Burdet showing the life history of birds on some of the reservations on the coast of Holland.

The contributions of chief interest were a number of papers on the birds of the Neotropical region, reports on recent work in banding birds, and the discussion of vernacular names and problems of field identification. R. N. Davis' illustrated account of 'Bird Collecting in Panama,' Chapman's 'Distribution of Bird Life in Ecuador,' Mrs. Reichenberger's 'Remarks on the Avifauna of Matto Grosso, Brazil,' and Wetmore's 'Bird Life of the Chaco' presented a series of pictures of birds of widely separated areas from Panama to Patagonia, Murphy's accounts of the condor, frigate bird and penguins, Miller's remarks on the Ramphocaenidae and Griscom's discussion on the House Wrens of South America directed attention to groups of special interest. Regional papers dealing with North America included Stuart's 'Breeding Birds of the Saskatchewan,' Street's 'Water Birds of the New Jersey Coast,' Harper's 'Birds of the Okefinokee Swamp' and Pennock's 'Habits of the Florida Burrowing Owl.'

The Reports of Lincoln and Baldwin presented summaries of recent work in banding birds and brought out some of the possibilities in this field of observation. Baldwin found in banding Towhees at Thomasville, Ga., that the colors of the eyes grade so imperceptibly from red through yellow to white that no sharp line of demarcation between the extremes could be drawn. His remarks on the mating of the House Wren and his conclusions that these birds normally remain mated for a period of only six weeks led to a general discussion on the subject of mating.

Nomenclature received perhaps less attention than usual. Oberholser exhibited the first part of the manuscript of the new Check List of African birds prepared by W. L. Sclater as one of

the parts of the 'Systema Avium,' and a list of names of Australian birds to be submitted at the annual meeting of the Royal Australasian Ornithologist's Union. Rogers in presenting some 'Suggestions in regard to Vernacular Names,' advocated the same designation for the same species in America and England, the suppression of pedantic names and questioned the utility of subspecific names in vernacular terminology. The general discussion which followed was summed up by the President who called attention to the fact that common names cannot be established unless they follow custom, cumbersome names should be simplified, and when no short vernacular designation is available the name which has the most usage in literature should be the one adopted.

The losses through death which the Union had sustained during the year were the occasion for an unusual number of memorial addresses. Osgood reviewed the life and work of Charles B. Cory; Chapman paid a tribute to Dr. J. A. Allen, his devotion to scientific work and his long service in behalf of the Union; and Richmond prepared a memorial on William Palmer which, however, was only read by title. Biographical sketches of Edwin Carter of Colorado and William A. Werner of Pennsylvania, two little known naturalists who died some years ago, were presented by F. C. Lincoln and H. S. Regar.

Moving pictures which were employed to illustrate seven different papers occupied the greater part of two afternoon sessions and served to show not only many important details in the life history of birds but new ways in which this form of illustration can be utilized in the study of ornithology.

Most of the technical papers were presented at the session on Thursday morning and proved of considerable interest. By restricting authors to the limits assigned on the program time was gained for discussion which was more general than usual, but even with long sessions it was necessary to read half a dozen papers merely by title.

Other events.—The social gatherings of the Union included a conversazione in the library of the Academy of Sciences on Tuesday evening, the annual dinner at 'The Roosevelt' on Wednesday evening, a visit to the Zoological Gardens on Friday and a trip to the Pine Barrens in the vicinity of New Lisbon, New Jersey, on Saturday.

At the Tuesday evening meeting a number of early unpublished drawings of Audubon, loaned for the occasion by Mr. Joseph Y. Jeanes, and some of the historic manuscripts and rarer illustrated works on birds belonging to the Academy were placed on exhibition for the benefit of the members. The entertainment at the annual dinner was furnished by members of the Delaware Valley Ornithological Club and after dinner speaking began with remarks by Samuel Scoville, Jr., and some ornithological reminiscences by Dr. Spencer Trotter. The company was then entertained by the entrance of Alexander Wilson followed by John James Audubon and C. S. Rafinesque, each of whom clad in characteristic costume commented in turn on the progress in ornithology and the changes which had occurred since the days when they were active. At the meeting on Friday the members of the Union were guests of the Zoological Society at luncheon and a record was made of the visit to the Philadelphia Zoological Gardens by the first moving picture ever taken of the members. Rain on Saturday interfered somewhat with the outing to the Pine Barrens but in spite of the unfavorable weather a party of about 30 made the trip and were rewarded by seeing a number of characteristic autumn birds.

Results.—The tangible results of the business meetings included the first public award by the Union of a medal for meritorious scientific work in ornithology and a definite authorization of the new 'Ten Year Index of The Auk.' The results of the scientific meetings crystallize slowly and are more difficult to summarize. Data already obtained through banding birds indicate that some ideas now prevalent in regard to migration and mating require revision and a study of some of the films demonstrated the value of the moving picture camera in correcting certain erroneous ideas as to movements or functions of the feet or bill, particularly in woodpeckers and other species. Attention was called to the possibility of distinguishing the sex of birds in the field by habits and action even in such species as the House Wren in which distinguishing sex markings of the plumage are absent. Most important of all was the demonstration in several of the papers of the necessity of adopting modern methods and focusing every available source of information and mechanical device on the problem in hand whether it be a question of migration, distribution or the revision of a group.

Thanks to the efficiency of the local Committee of Arrangements the Philadelphia meeting was pronounced one of the most successful meetings of recent years in spite of the handicaps of Election Day, high railroad rates and unfavorable weather for the excursion which prevented the attendance of several members.

The next annual meeting will be held at the Field Museum, Chicago, in October 1922. This will be the first meeting in the Middle West and it is hoped to make it the occasion of bringing together many members in the Mississippi Valley who have been unable to attend the meetings in the East.

PROGRAM.

(Papers are arranged in the order in which they were presented at the meetings. Those marked with an asterisk (*) were illustrated by lantern slides.)

TUESDAY.

1. In Memoriam—CHARLES BARNEY CORY. W. H. OSGOOD, Chicago, Ill. (45 min.).
2. *Observations on some Water Birds of the New Jersey Coast. J. FLETCHER STREET, Beverly, N. J. (15 min.).
3. Paintings showing the Metallic Colors of Birds. FRANK BOND, Washington, D. C. (5 min.).
4. Notes on the Habits and Sex Plumage of the Florida Burrowing Owl. C. J. PENNOCK, Kennett Square, Pa. (15 min.).
5. *Birds of the Okefinokee Swamp, Georgia. FRANCIS HARPER, Ithaca, N. Y. (20 min.).
6. *On Some of the Breeding Birds of the Saskatchewan. GEO. H. STUART, 3RD, Philadelphia, Pa. (20 min.).
7. *Notes on Edwin Carter, a prominent Naturalist of Colorado. F. C. LINCOLN, Washington, D. C. (10 min.).
8. The Wild Life School at McGregor, Iowa. GEORGE BENNETT , Iowa City Ia. Presented by HARRY C. OBERHOLSER. (15 min.).
9. *Bird Life of the Chaco. ALEXANDER WETMORE, Washington, D. C. (20 min.).
10. *Bird Collecting in Panama. R. N. DAVIS, Scranton, Pa. (45 min.).
11. *The Andean Condor as a Coastal Bird. ROBERT CUSHMAN MURPHY. (10 min.).
12. *The Status of Cory's Shearwater. ROBERT CUSHMAN MURPHY. (15 min.).
13. *The Distribution of Bird-Life in Ecuador. FRANK M. CHAPMAN. (20 min.).

WEDNESDAY MORNING.

14. Progress in Bird Banding. F. C. LINCOLN, Washington, D. C. (20 min.).
15. Bird Banding Notes of 1921. S. PRENTISS BALDWIN, Cleveland, Ohio. (30 min.).
16. In Memoriam—Joel Asaph Allen. FRANK M. CHAPMAN, New York. (45 min.).
17. The Problem of Field Identification. LUDLOW GRISCOM, New York. (20 min.).

WEDNESDAY AFTERNOON—NOS. 19–22, MOTION PICTURES.

18. *An Appreciation of William A. Werner, a little known Pennsylvania Naturalist. H. SEVERN REGAR, Norristown, Pa. (15 min.).
19. A New Use for Motion Pictures of Birds. ARTHUR A. ALLEN, Ithaca, N. Y. (40 min.).
20. Bird Life in Holland. ADOLPH BURDET, Overveen, Holland. (40 min.).
21. Studies of Some Familiar Birds in Motion Pictures. THOS. S. ROBERTS, Minneapolis, Minn. (40 min.).
22. Views of Western Bird Life, by Wm. L. Finley. Presented by T. GILBERT PEARSON, New York. (20 min.).

THURSDAY.

23. Some Remarks on the Avifauna of Matto Grosso, Brazil. MRS. ELSIE M. B. REICHENBERGER, New York. (20 min.).
24. The Classification of the Woodpeckers and their Allies. W. DE W. MILLER, New York. (30 min.).
25. The Distribution of the House Wrens of the Genus *Troglodytes*. FRANK M. CHAPMAN and LUDLOW GRISCOM, New York. Presented by MR. GRISCOM. (20 min.).
26. (a) A New Family of Neotropical Birds, the Ramphocaenidae. (10 min.).
    *(b) A Suggestion as to the Origin of Diastataxy. W. DEW. MILLER, New York. (10 min.).
27. Yellowleg Skeletons. Illustrated by Chart. J. T. NICHOLS, New York. (15 min.).
28. Check Lists Abroad. HARRY C. OBERHOLSER, Washington, D. C. (15 min.).
29. Suggestions in regard to Vernacular Names. CHARLES H. ROGERS, Princeton, N. J. (20 min.).
30. Greetings from England. H. KIRKE SWANN, London. ((5 min.).
31. *Experience in Bringing up a Family of Bluebirds. MISS M. W. DALEY, Sleighton Farm, Pa. (15 min.).
32. Distributional Notes on American Water Birds. Motion Pictures and other Illustrations. ROBERT CUSHMAN MURPHY. (40 min.).
33. Motion Pictures illustrating the Home Life of Some Pennsylvania Birds. ERNEST COURTS, Buck Hill, Pa. (45 min.).

34. Bird Life in American Zoological Gardens. Illustrated by Motion Pictures. ARTHUR H. FISHER, Washington D. C. (45 min.).
35. Ten Summers' Observations of Birds near Slide Mountain in the Catskills. MISS M. W. DALEY, Sleighton Farm, Pa. (Read by title.)
36. In Memoriam—William Palmer. CHAS. W. RICHMOND, Washington, D. C. Presented by HARRY C. OBERHOLSER. (Read by title.)
37. Identifying the Ducks of the Eastern United States at long range. LUDLOW GRISCOM, New York. (Read by title.)
38 *Discontinuuous Distribution as illustrated by the Species of the Genus *Diglossa*. FRANK M. CHAPMAN, New York. (Read by title.)
39. Our English Nomenclature. A. D. DUBOIS, Springfield, Ill. (Read by title.)
40. Some Observations on the Coast of Brazil. GEO. W. FIELD, Washington, D. C. (Read by title.)
41. *Notes on Nesting Habits of Some Massachusetts Duck Hawks. S. WALDO BAILEY, Pittsfield, Mass. (Read by title.)

FELLOWS AND MEMBERS PRESENT.

FELLOWS—Outram Bangs, W. B. Barrows, C. F. Batchelder, A. C. Bent, F. M. Chapman, Jonathan Dwight, A. K. Fisher, Geo. B. Grinnell, J. H. Fleming, E. H. Forbush, L. A. Fuertes, W. L. McAtee, W. DeW. Miller, R. C. Murphy, H. C. Oberholser, W. H. Osgood, T. S. Palmer, C. W. Richmond, T. S. Roberts, John H. Sage, W. E. Saunders, Witmer Stone, P. A. Taverner, W. E. C. Todd, Alexander Wetmore—Total 25.

RETIRED FELLOWS—W. K. Fisher, N. T. Lawrence.

CORRESPONDING FELLOWS—W. L. Abbott, H. Kirke Swann.

MEMBERS—A. A. Allen, Vernon Bailey, Mrs Vernon Bailey, W. L. Baily, S. Prentiss Baldwin, Thomas Barbour, Frank Bond, F. L. Burns, E. A. Goldman, Ludlow Griscom, Francis Harper, A. H. Howell, F. C. Lincoln, G. S. Morris, J. T. Nichols, T. G. Pearson, C. J. Pennock, J. L. Peters, J. C. Phillips, S. N. Rhoads, C. H. Rogers, B. H. Swales, C. W. Townsend, Spencer Trotter.—Total 24.

ELECTION OF FELLOWS, MEMBERS, AND ASSOCIATES.

FELLOWS:

DR. GLOVER MORRILL ALLEN, 234 Berkeley St., Boston Mass.

DR. WILLIAM HARRY BERGTOLD, 1159 Race St., Denver, Colo.

ALLAN CYRIL BROOKS, Okanagan Landing, B. C.

JAMES PAUL CHAPIN, Am. Mus. Nat. Hist., New York City.

HONORARY FELLOWS:

ARCHIBALD JAMES CAMPBELL, "Bulgaroo," Broughton Road, Surrey Hills, Victoria, Australia.

DR. WILLIAM EAGLE CLARKE, Royal Scottish Museum, Edinburgh, Scotland.

REV. FRANCIS CHARLES ROBERT JOURDAIN, Appleton Rectory, Abingdon Berks, England.

JOHN HENRY GURNEY, Keswick Hall, Norwich, England.

NAGAMICHI KURODA, Fukuyoshi Cho, Akasaka, Tokyo, Japan.

CORRESPONDING FELLOWS:

WILFRID BACKHOUSE ALEXANDER, Inst. Science and Industry, William St., Brisbane, Queensland, Australia.

THOMAS CARTER, Wensleydale, Mulgrave Road, Sutton, Surrey, England.

ABEL CHAPMAN, care Zoological Society, Regents Park, London, N. W. 8, England.

TADEUSZ CHROSTOWSKI, Nacedova Museum, Przyodnieze, Krakowski-Przedmiescie 26–28, Warsaw 1, Poland.

HENRY JOHN ELWES, Colesborne, Cheltenham, Gloucestershire, England.

DR. ALESSANDRO GHIGI, R. Università, Bologna, Italy.

JOHN DAVID DIGUES LA TOUCHE, The Lodge, Glendalough County Wexford, Ireland.

GEORGE EDWARD LODGE, Hawkhouse, Park Road, Camberley, Surrey, England.

HERMANO APOLINAR MARIA, Instituto de la Salle, Bogota, Colombia.

ARTHUR HERBERT EVELYN MATTINGLY, Custom House, Melbourne, Victoria, Australia.

COL. RICHARD MEINERTZHAGEN, 63 Bedford Gardens, Kensington, W. S., London, England.

DR. ALIPIO de MIRANDA RIBEIRO, Therigopolis, Estado de Rio Janeiro, Brazil.

DR. VICTOR GURNET LOGAN VAN SOMEREN, care Medical Dept., Box 140, Nairobi, Brit. East Africa.

HUGH WHISTLER, care King, King & Co., Bombay, India.

MEMBERS:

[1]SAMUEL PRENTISS BALDWIN, Williamson Bldg., Cleveland, Ohio.

GEORGE LINCOLN FORDYCE, 40 Lincoln Ave., Youngstown, Ohio.

FREDERICK CHARLES LINCOLN, Biological Survey, Washington, D. C.

[1] CHARLES HENRY ROGERS, Nassau Inn, Princeton, N. J.

[1] DR. CASEY ALBERT WOOD, 7 W. Madison St., Chicago, Ill.

ASSOCIATES:

The list of Associates contains 250 candidates. These names are omitted here to save space as they will appear in the annual Directory of Members in 'The Auk' for April.

[1] Life members.

REPORT OF THE SECRETARY.

BY T. S. PALMER.

IN spite of serious handicaps inevitable in a period of reorganization and reconstruction such as that through which we are now passing, the year 1921 has been one of the most prosperous in the history of the Union. The membership is larger than ever before and losses through resignation and delinquency have been small. The net gain after deducting all losses on account of death, resignation, delinquency and failure to qualify was 209 members. We have been in correspondence with organizations and ornithologists in other lands and are keeping in touch with such projects as the 'Systema Avium' undertaken by the British Ornithologists' Union and the new 'Check List of Birds' of Australia which is being prepared by the Royal Australasian Ornithologists' Union. Work has been begun on a new decennial index of 'The Auk' and for the first time the Union is in a position to award a medal for meritorious work on American birds.

Membership.—The present membership of the Union is approximately 1350 with at least one representative in every State except Mississippi; in Alaska, Hawaii, the Phillipines; six Provinces of Canada and a number of foreign countries. In November 1920 the total membership was 1142. The distribution in each year is shown by the following statement:

Year	Fellows	Retired Fellows	Honorary Fellows	Corresponding Fellows	Members	Associates	Total
1921	46	4	20	80	91	1110	1351
1920	49	3	19	75	86	910	1142

The gain during the year comprised the election of 13 Corresponding Fellows and 306 Associates at the last annual meeting but this apparent increase of 319 was offset by the loss of more than 100 members, including 19 by death, 19 by resignation, 30 by failure to qualify and 42 by delinquency. The deaths, counting 5 which occurred in previous years, but news of which was delayed included those of 3 Fellows, 1 Honorary Fellow, 6 Corresponding Fellows and 9 Associates.

The effort to increase the number of life members has made some progress but not as much as was anticipated and has been offset by the loss through death of 1 life Fellow and 1 life Associate. The Union has nearly 50 life members including 5 Fellows, 7 Members and more than 30 Associates. The foreign membership includes 20 Honorary Fellows and 80 Corresponding Fellows. During the year special efforts were made to obtain information regarding several Corresponding Fellows who had not been heard from for some time. After considerable correspondence extending over a period of many months information was finally obtained from Russia regarding some of our Fellows in that country who had been out of reach of communication since the war, with the result that deaths were reported of Sergius N. Alpheraky, and Dr. Valentin L. Bianchi, both of Petrograd. Through the kind offices of the Greek Legation in Washington news was also obtained of the death of Dr. Theobald J. Kruper of Athens, Greece.

Service.—In addition to answering a large number of miscellaneous inquiries and requests of various kinds, efforts have been made to assist members and public libraries in completing sets of 'The Auk' and in furnishing full names and biographical data regarding members or other ornithologists.

The Journal.—The total number of complete sets of 'The Auk' now known is 185 of which 76 are in public libraries and 109 in private ownership. It seems doubtful whether the total can be very greatly increased. Several owners of complete sets have died recently and their sets have changed hands or have become dispersed. At present there are at least 6 complete sets (only one of which belongs to the Union) and several incomplete sets on the market.

Objects of the Union.—Recently some study has been given by the Secretary to the objects of the Union as set forth in the certificate of incorporation. These are briefly stated as:

1. The advancement of the members in ornithological science;
2. Publication of a journal of ornithology;
3. Acquisition of a library;
4. Care and collection of materials relating to the above objects.

The Union has thus far confined its energies to the first two objects and has made no effort to acquire a library or a collection.

The progress of its journal, 'The Auk', has been reported from time to time and the details regarding the volume for the present year have been given by the editor.

The 'advancement of the members in ornithological science' offers a problem which may well command the serious thought and best energies of the Union. With the present high cost of paper and printing it may be questioned whether anything will do more to advance the interests of the membership than to provide a medium of publication with reasonable promptness for investigations of the members. Aside from the larger special books and reports and the publications of the larger museums, most of the shorter papers and notes on birds now appear in periodical literature. During the year 1920 the number of octavo pages of leading American ornithological journals was 1682, distributed as follows: Auk 677; Bird Lore 428; Cassinia 55; Condor 218; Oologist 146; and Wilson Bulletin 158.

An increase of 300 pages would go far toward relieving the pressure for the publication of most of the shorter contributions now awaiting printing, or if 'The Auk' could be increased by even 100 pages it would provide a medium for many of these papers. The printing of State lists presents a more difficult problem but in spite of high prices the Cooper Ornithological Club has successfully issued an excellent list of the Birds of Montana, the Geological and Natural History Survey of South Dakota has recently published a paper on the birds of that State; the Birds of California by W. L. Dawson is now appearing in parts, and a report on the Birds of Alabama is in course of publication by the Biological Survey. There are now in manuscript awaiting printing, reports on the birds of New Mexico and Texas and in the near future manuscript lists of birds of several other States will doubtless be ready for publication. No comprehensive lists of the birds of Florida, Georgia, Kentucky, Mississippi, North Dakota, Oklahoma or Tennessee have thus far appeared, while the lists for Idaho, Maryland, Minnesota, Nevada, Oregon, Pennsylvania and Utah were published more than 20 years ago and require revision in the light of modern methods and present information.

Many years ago the Union established the nucleus of a research fund the income of which was not to become available until the

principal reached the sum of $5000. This limit has not as yet been attained but it is highly desirable that during the coming year, if possible, contributions be made to this fund to bring it up to the requisite amount and thus make available for current needs an income amounting to $250 annually or $500 biennially. Only recently an opportunity to cooperate in a valuable piece of research work has been lost through lack of a small sum which might have been provided had the income of this fund been available.

Activities of Members Abroad.—During the past year two of our members who have been residing abroad, Zimmer in British Papua and N. Gist Gee in China, and Beebe, Field, Peters and Wetmore who have been in South America, have returned home. Bullock has spent some time in Argentina, Beck is still collecting in the South Pacific, Cherrie has been at work in Ecuador, Raven has recently undertaken work in Australia, and Dr. Casey A. Wood has sailed for Barbados. One of the Corresponding Fellows, M. J. Delacour left for the West Indies and Venezuela in September, last summer Rev. F. C. R. Jourdain headed an expedition sent out by the University of Oxford to Spitzbergen, and in Africa Geo. L. Bates has been conducting explorations in northern Cameroon in the vicinity of Lake Chah.

DECEASED MEMBERS, 1920–1921

JOEL ASAPH ALLEN,[1] Founder and first President, aged 83, died at Cornwall on Hudson, N. Y., August 29, 1921.

CHARLES BARNEY CORY,[2] Fellow, died in his 65th year at Ashland, Wis., July 29, 1921.

WILLIAM PALMER,[3] Fellow, died in his 65th year in New York City, April 8, 1921.

ALPHONSE JOSEPH CHARLES DUBOIS, Honorary Fellow, aged 82, died at Coxyde sur Mer, Belgium, June 1, 1921.

SERGIUS NICKOLAEVICH ALPHERAKY,[4] Corresponding Fellow, aged 68, died at Petrograd, Russia in 1918.

VALENTIN LVOVICH BIANCHI,[5] Corresponding Fellow, died in his 63rd year at Petrograd, Russia, Jan. 10, 1920.

---

[1] For obituary notice, see Auk, XXXVIII, pp. 490–492.
[2] " " " see Auk, XXXVIII, pp. 492–493.
[3] " " " see Auk, XXXVIII, pp. 493–494.
[4] " " " see Auk, XXXVIII, p. 495
[5] " " " see Auk, XXXVIII, pp. 497–498.

HENRY WEMYSS FEILDEN,[1] Corresponding Fellow, died in his 83d year at Burwash, England, June 18, 1921.

THEOBALD JOHANNES KRUPER, Corresponding Fellow, died in his 92d year at Athens, Greece, March 23, 1921.

FREDERICK HERSCHEL WATERHOUSE,[2] Corresponding Fellow, died in his 74th year in London, England, March 12, 1919.

MRS. W. H. BARROWS, Associate, (elected in Nov. 1920), died at Pittsfield, Mass., in January, 1921.

WILLIAM JAMES BENNETTS,[3] Associate, aged 55, died at Washington, D. C., Sept. 13, 1920

STEWARDSON BROWN,[4] Associate, died in his 54th year in Germantown, Philadelphia, Pa. Mar.ch 14 1921.

DUDLEY BOWDITCH FAY, Associate, aged 61, died at Boston, Mass., Feb. 7, 1921.

WILLIAM HENRY FOX, Associate, aged 64, died at Washington, D. C., Nov. 3, 1921.

NATHANIEL ATWOOD FRANCIS, Associate, died in his 63d year at Brookline, Mass., June 10, 1921.

JAMES CLARENCE QUIGGLE, Associate, aged 69, died at Washington, D. C., June 21, 1921.

FREDERIC SCHENCK, Associate, died at Lenox, Mass., Feb. 29, 1920.

MRS. CECIL STEWART, Associate, died at Boston, Mass., early in the summer of 1921.

GENERAL NOTES.

The Kittiwake in Florida.—I shot a Kittiwake, (*Rissa tridactyla tridactyla*) on the beach at Jupiter on the east coast of Florida on January 24, 1921.

The feathers of the lower surface were very heavily coated with crude oil but as the bird was in fair condition the accident must have been of recent occurrence.

When first observed it was sitting among some Herring Gulls near high water mark, as it rose I saw it was not a Bonaparte's Gull, which I had taken it for, and shot it. It proved to be a male in the plumage of the second year and is now in the State Museum at Gainesville.

I was struck with the pronounced emargination of the tail—much more evident than in the adult.—ALLAN BROOKS, *Okanagen Landing, B. C.*

---

[1] For obituary notice see Auk, XXXVIII, p. 496.
[2] " " " see Auk, XXXVIII, pp. 496–497.
[3] " " " see Auk, XXXVIII,, p. 622.
[4] " " " see Auk, XXXVIII, pp. 316–317.

Shoveller in Bergen Co., New Jersey, in Spring.—The marshes of Overpeck Creek, near Englewood have long been an excellent place for freshwater ducks, and their rapid increase there in recent years in the spring has been a source of gratification to many field ornithologists of the New York City region. In line with this statement the spring of 1921 was better than any previous one. On April 3, American Mergansers, Mallard, Black Ducks, Green-winged Teal, Pintail, Lesser Scaup, and Ruddy Ducks were scattered over the waters of the creek or roosting on the flats left there by a low tide. We crawled up to the very edge of the creek behind some reeds, and had several minutes of observation before some Pintails scarcely 50 feet from us gave the alarm. For a few minutes the air was full of flying ducks streaming off in various directions. A last sweep of the glasses over the supposedly deserted creek revealed a small flock of Teal and, to our great surprise, an adult male Shoveller roosting in plain sight on a mud bar. The dark head, long bill, ruddy breast and white ring around the neck were all conspicuous, and when after a few minutes the bird stood up and started waddling to the water, there could be no doubt of the identity of a so conspicuously marked species, which Griscom knew well from field experience in various parts of this country and Europe. The Shoveller has been shot just once on Overpeck Creek though the exact data was not preserved by the lucky sportsman. It is reported "to have occurred formerly" by old gunners. Otherwise we are not aware of any definite record for this species in northern New Jersey.—Ludlow Griscom and E. R. P. Janvrin, M. D., *New York City.*

Mute Swans on the Hudson.—In the July, 1921, number of 'The Auk,' under "General Notes," Mr. S. C. Bishop writes of seeing "Four swans, apparently *Olor columbianus* . . . about two miles north of Staatsburgh, N. Y." At various times other observers have reported swans from the same locality and assumed them to be of this species.

As a matter of fact, Mr. Jacob Ruppert a number of years ago introduced the European Mute Swan, *Cygnus olor*, in the large cove between Staatsburgh and Rhinebeck, and during recent years the gradually increasing flock has eluded capture and wing-clipping so that individuals and groups are often seen in the Hudson River at some distance from their home. Last autumn this flock numbered 26 birds, but during the latter part of the winter only a few were present, leaving the whereabouts of the rest a matter of conjecture. This spring nearly the whole number had returned.

This flock was recorded in 'Bird Lore's' 1920 Christmas Census and was also mentioned in the 'Yearbook' of the Rhinebeck Bird Club for 1918, 1919 and 1920, which is briefly reviewed in the same number of 'The Auk' which contains Mr. Bishop's note, the review referring to "White" Swans, which we learn was a misprint for "Mute."

It is of course likely that wild swans will decoy to these Rhinebeck birds, but unless positively identified it is safer to assume that all seen in this locality are *Cygnus olor*.—Maunsell S. Crosby, *Rhinebeck, N. Y.*

Black Tern on Long Island in Spring.—On May 29, 1921, we were studying shore birds on the famous Gilgo flats on Jones Beach, opposite Amityville, Long Island. Several Common and one Least Tern had just flown by, and we were looking at a couple of Knots and some Red-backed Sandpipers among a flock of several commoner species, when an adult Black Tern was discovered sitting on the sand at the water's edge. It turned out to be very tame, allowing us to approach to a distance which was later found to be 37 paces. With so unmistakably marked a bird it seems superfluous to describe its coloration. This is the first spring record for Long Island. Crosby's recently published spring record for Rhinebeck, Dutchess Co., N. Y., which is unquestionably authentic, is the only other from the New York City region. As a spring migrant, therefore, the Black Tern seems to be in the same class as the Connecticut Warbler, but identifying it satisfactorily is, fortunately, a much simpler matter.—Ludlow Griscom and J. M. Johnson, *New York City.*

Some Tern Notes.—In 1907, while engaged in the Mississippi pearl mussel inquiry, we found, on August 1, a colony of Least Terns (*Sterna antillarum*) breeding on Bird Point, which is the northern bank of the Ohio River at its junction with the Mississippi River. There were probably fifty birds in this colony, all busy carrying food to their youngsters.

On August 12 we discovered another small colony of Least Terns and some Black Terns, (*Hydrochelidon nigra surinamensis*), both carrying food, at the junction of Duck and Tennessee Rivers, Tennessee. The Black Tern colony seems to me rather farther south than any that I am acquainted with, while the Least Tern seems north and inland for that species.—Paul Bartsch, *U. S. National Museum, Washington, D. C.*

The Pintado Petrel (Daption capense) in Maine.—In 1883 this bird was accorded a place in our fauna in these terms:

"As these sheets are passing the press we learn from Mr. Purdie of this most interesting acquisition to our fauna . . . There appears to be no reasonable question in this case. The bird is said to have been shot at Harpswell, Casco Bay, Maine, and is now preserved in the collection of the Natural History Society of Worcester, Mass., where it is or was labelled "Mank's Shearwater." The identification of the specimen rests upon Mr. Purdie's authority. I have seen a letter[1] to Mr. Purdie from Mr. E. H. Forbush, of Worcester, containing a statement from a Mr. Wooley writing from Sabattis[2], Me., certifying to the capture of the bird at the place named some eight years ago."[3]

This record failed to receive attention in those works where it should have been mentioned, though it was cited in the third edition of Coues' 'Key to North American Birds.'

[1] This letter has disappeared.
[2] A suburb of Lewiston.
[3] 1883: New Eng. Bird Life, II: 386, 387.

When the writer began to give attention to the literature and records of Maine birds, this case where on the one hand there was said to be "no reasonable question," and on the other hand an almost absolute silence, was met with. The question arose as to whether the A. O. U. Committee on Nomenclature had information on the subject not known to the general reader; and a letter was addressed to Dr. Coues, then chairman of the Committee. This brought the reply that he and presumably others had forgotten it, that he had no doubt of the authenticity of the record. He suggested that the matter be investigated anew, and a supplementary note sent to 'The Auk.'

This investigation was promptly undertaken, and the group of letters at hand from nearly every person connected with the matter show, it is believed, that the original record quoted above is correct. But since the record has fared badly in certain works on Maine birds, and many of the persons from whom the facts have been gathered have passed from life, it seems that these facts should be given to the public, with sufficient fullness to make the matter perfectly clear.

The late Thomas A. Dickinson, from 1872 to 1880 superintendent of the Worcester Museum of Natural History, and later Custodian of the Worcester Society of Antiquity, took great pains to aid in reaching the true facts in the case, and to his knowledge thereof, and his unfailing patience and effort we are much indebted.

On December 23, 1896, Mr. Dickinson wrote that he purchased the bird in question for the Worcester collection in September 1875, as shown by the records of the Society. Miss Dell Teneyck who was custodian of the Worcester collection in 1896 wrote in May of that year that "The specimen is labelled as follows; Puffinus anglorum (Temm). Mank's Shearwater; Lewiston Me., (young) June 1873."[1]

So far we are on safe ground, amply attested by the invincible records of the Worcester Society of Natural History, and except for a discrepancy in the locality (Lewiston, which is easily explained through the fact that the bird was purchased in that place), in agreement with the 'New England Bird Life' record.

The "Rift within the lute" came in a letter from Levi Wooley to Mr. Dickinson written March 1, 1897, in which he says "I do well remember letting you have the Shearwater bird. . . It was killed by C. F. Nason, formerly of Lewiston, Me., at the time we were up to the Rangley Lakes. Bird killed on Moose-luck Meguntic Lake in the year Hell Gate was blown up." Mr. O. W. Knight receiving this through another source published the essential part of Mr. Wooley's statement in his 'Birds of Maine.'[2]

Mr. Edwin Wakefield, however, with whom Mr. Wooley and Mr. Nason visited Rangley Lakes, states that he remembered nothing about the bird and that the only trip they made was in September 1876 which happens to

[1] Miss Ella L. Horr, present Custodian supplies the information that it is a female.

[2] 1897, Knight; Bull. 3, Univ. of Me., pp. 23-24.

be the exact time of the Hell Gate explosion. It is practically certain that Mr. Wooley's memory became confused after a lapse of twenty years and that he was thinking of some other bird, especially since it was he who gave Mr. Purdie the original data for 'New England Bird Life' stating that the bird was taken at Harpswell, Casco Bay, and this when the record was only a few years old. Unfortunately the label has been replaced by another following in part the Wooley letter of 1897.—ARTHUR H. NORTON.

Cory's Shearwater off Newfoundland, with Remarks on its Identification in Life.—On August 11, 1920, while on the Labrador steamer a few miles north of Bonne Bay, western Newfoundland, and about one mile off-shore, we came across quite a gathering of water-birds, Terns, Gulls of 3 species, some Gannets, and a flock of Leach's Petrels. Suddenly a Shearwater cut across the bow and joined the Petrels, all flying along with the boat and not more than 100 yards distant. Any Shearwater would have been unexpected, but we were very much surprised to immediately recognize Cory's Shearwater, a species not recorded previously in such a northern latitude.

This bird is little known to American field ornithologists, and as the characters given in Chapman's 'Handbook', for instance, make it appear a difficult species to separate from the Greater Shearwater, a note on this subject may be welcome, as we were well acquainted with both species prior to the observation above recorded. There is no difficulty whatever in distinguishing them even at a considerable distance. In the Greater Shearwater the dark fuscous cap extends down to a line just below the eye, where it gives way abruptly to the white of the underparts, this white forming an incomplete collar on the neck. In the field the cap appears black, and the bird has, consequently, a strongly bicolored appearance on the side of the head, while the invasion of the white half-collar in the darkly colored upperparts is equally noticeable. The head and neck of Cory's Shearwater is a lighter ashy fuscous above. This color extends much further below the eye on the side of the head than does the dark cap of the Greater Shearwater, and then fades *very gradually* into the white of the throat and breast. There is no trace of a half-collar. In the field, therefore, Cory's Shearwater appears as a grey-headed bird with a white throat, without any contrast of color. Cory's Shearwater has a longer, stouter, yellow bill, the Greater Shearwater, a shorter, slenderer, blackish bill. The difference in color in the bill is not very satisfactory, but the difference in proportions is about as good between these two Shearwaters, as for instance, between the Downy and Hairy Woodpeckers, or the Glaucous and Iceland Gulls. We have not found the difference in color of the under tail coverts of any value in the field, and do not believe this character could be used except under most unusual circumstances. Cory's Shearwater is a slightly larger bird throughout, but the degree of difference is small, and we do not regard this as a reliable field character.

To return to our Newfoundland bird, the characters discussed above were all duly noted. It remains to add that the weather was extraordinarily hot, over 90°, and that a strong southwest gale had been blowing for two days.—Ludlow Griscom and E. R. P. Janvrin, M. D., *New York City.*

The Old Squaw (Harelda hyemalis) at San Diego, Calif.—In 1896 the late Lyman Belding shot an Old Squaw in San Diego Bay, the capture being recorded in 'The Auk,' by the undersigned as being the most southerly record for the species on the Pacific coast. For 24 years this remained the only recorded capture of the species so far from its normal winter habitat. We now, however, have several records that would seem to indicate that this duck might be of more frequent occurrence than was supposed. On January 4, 1920, a female was taken on Mission Bay and on December 3, of the same year a male was shot at the same place. Again on the 2nd and 19th of November, 1921, two females were taken, four records in all for the same body of water and all by Mr. Ad. Pearson, a local sportsman-naturalist. Mission Bay, which appears on most maps as False Bay, is about a mile north of San Diego Bay and is an extensive body of shallow water offering unusual attractions for water and shore birds. Mr. Pearson has shot over these waters for the past 35 years and states that he has not seen any of these ducks prior to January 1920.—A. W. Anthony, *Natural History Museum, San Diego, Calif.*

King Eider (Somateria spectabilis) in Southern Michigan.—The note in the July 'Auk' of the occurrence of King Eiders near Detroit reminds me that a specimen came into my hands in November, 1911. It was a young male and was shot out of a small flock on Gun Lake, Barry County, Mich. The skin is now in the museum of the University of Michigan.—W. E. Praeger, *Kalamazoo, Mich.*

Shelduck (Tadorna cascarca) in Massachusetts.—Last October Deputy Fish and Game Commissioner, Carl E. Grant, of Gloucester, brought in to me a Shelduck (*Tadorna cascarca*) in the flesh, a young female killed October 5, 1921, near the mouth of Essex River, Ipswich Bay, Essex County, Mass., by a sea captain of Gloucester, Howard H. Tobey. He states that when first seen, it was alone over his decoys about half a mile from shore and was very shy. The bird was somewhat pin feathered and had not quite finished molting, although its wings consisted entirely of new feathers. There were one or two rectrices missing, perhaps three, and three more only partly grown.

The question at once arises whether this bird had escaped from captivity. I looked the plumage over very carefully and its perfect condition indicated that the bird had not been in captivity, at least since the molt.

The specimen will be presented to the Peabody Museum. A description

of it follows: Bill pinkish dusky toward tip (nail positively black) lamellated; trifle broader towards tip than at base; nostrils in the basal third. Head and about one-half neck brownish gray, somewhat mottled with white on sides and below. Under parts including linings of wings, lower wing coverts and axillars white. Upper parts generally, including upper wing coverts white. Primaries sooty; about a terminal fourth of the secondaries dark sooty brown, with a green speculum, each secondary slightly edged and tipped below with lighter. The white tail has all but two outer feathers dark tipped. Scapulars brown. A ring across the shoulders, part way round on the breast, chestnut. Feet flesh color.

Dimensions in inches: culmen (curve) 1.87; culmen (chord) 1.87; depth of bill 1; gape gape 2.12; length 22; wing 12.25; tail 4; mid-tow and claw 2.65; tarsus 2.65.—E. H. Forbush, *136 State House, Boston, Mass.*

White Pelican (Pelecanus erythrorhynchos) Nesting in Minnesota.—From Dr. Frank M. Chapman's most excellent work, 'Camps and Cruises of an Ornithologist,' page 371, I quote the following: "In Western Minnesota, Pelicans nested as recently as 1878." While living at Aitkin, Minnesota, on August 15, 1904, a hunter brought to me two young Pelicans which he shot on the shores of Sandy Lake, about 40 miles north of Aitkin. They were small, not more than one-fourth grown, and were undoubtedly hatched and reared near the point of capture for they could not have migrated very far, in fact, were unable to fly.

Unfortunately their plumage was so badly soiled and so carelessly handled by the sportsman that I did not preserve them, which I have regretted since for the most undisputable evidence is the specimen in hand.—Albert Lano, *Fayetteville, Ark.*

American Egret (Casmerodius egretta) in Maine.—In 'The Auk' (Vol. XXXVIII, p. 109, January, 1921), I recorded an additional record of the Egret for the State of Maine—two specimens, one of which was shot and later secured by Dr. William P. Coues, who has since presented it to the Boston Society of Natural History. I also quoted twelve previously published records.

On July 15, 1921, Dr. William P. Coues saw a flock of seven on the Scarborough salt marshes which border a corner of the Prout's Neck Golf Links, and three days later a flock of nine were seen in the same locality by his brother, Robert W. Coues. This flock evidently scattered over the marshes, for between that date and the first week in September, only single birds or occasional pairs, were observed. Between July 19 and September 6, I observed single birds every few days. One favorite place was within 150 yards of the highway where there was constant passing. I stalked one bird and got within 75 yards, so that the yellow bill and black legs could plainly be seen with a glass. This bird was busily feeding in a ditch at low tide, but finally saw me and moved off to another part of the marsh.

These birds were seen by many residents in that section, who brought me word from time to time of a strange pure white bird they had seen while passing the marsh. This species certainly seems to be extending its range and in increased numbers.—RUTHVEN DEANE, *Chicago, Ill.*

Two Records of the Stilt Sandpiper.—In looking over my collection I find two specimens of Stilt Sandpiper (*Micropalama himantopus*). The first of these, No. 278, I took in a slough a little north of Burlington, Iowa, September 28, 1889. It was shot while feeding in the shallow water of this, then rapidly drying, slough.

On September 16, 1917, while returning to Washington through the Shenandoah Valley, we passed a cattle pool by the roadside a little east of Berryville, Virginia, in which a number of Least and Semipalmated Sandpipers were feeding and one bird revealed his identity and recalled my 1889 experience by immersing his head below the water in his quest for food. Having a little collecting gun aboard, we added the specimen to our collection, where it is now No. 2170.

This is the only sandpiper that I have met with which systematically fishes for food by ducking below the surface of the water.—PAUL BARTSCH, *U. S. National Museum.*

The Sharp-tailed Sandpiper in Southern California.—On September 16, 1921, while collecting shore birds on the mud flats of Mission Bay, near San Diego, a flock of eight or ten sandpipers dashed past me, uttering characteristic "piper" notes but of a tone and tune new to me. A few moments later a single bird was shot, which was of a similar appearance and may or may not have been of the same species.

The specimen proved to be a young male Sharp-tailed Sandpiper (*Pisobia aurita*), in first fall plumage and the first to be recorded from the coast of North America this far south.

When first seen the wanderer from northern shores was feeding along the edges of a tide pool, in company with one or two Least Sandpipers and showed little or no fear at any approach.—A. W. ANTHONY, *Natural History Museum, San Diego, Calif.*

The Purple Sandpiper (Arquatella maritima maritima), at Ithaca, N. Y.—On November 5, 1921, the writer collected a single specimen of the Purple Sandpiper at the head of Cayuga Lake, Ithaca, New York. It is now No. 898 in the collection of the Cornell University Museum. Apparently this is the first record of the species for the Cayuga Lake Basin.—GEO. M. MCNEIL, *Cornell University, Ithaca, N. Y.*

The Mourning Dove in Newfoundland.—Mr. W. A. B. Sclater, of St. John's, Newfoundland, has kindly permitted me to record the first known occurrence in Newfoundland of the Mourning Dove (*Zenaidura*

macroura carolinensis). The facts, which, together with a photograph of the mounted male bird, have been transmitted to me in correspondence by Mr. Sclater, are as follows:

A pair of Mourning Doves, male and female, were found together among the hills near Trepassey, Newfoundland, about October 1, 1920, and were shot by William Pennel, of Trepassey. They were received in the flesh by Mr. Sclater about October 10, 1920. The female was too badly torn by shot to make a presentable specimen, but Mr. Sclater had the male bird mounted and placed in the private museum of Mr. Frank Brehems, No. 1 Circular Road, St. John's, Newfoundland. It is probable that the arrival of these birds in Newfoundland was due to the very severe storm which passed northward along the Atlantic coast of North America on September 30 and October 1, 1920.—Harrison F. Lewis, *92 Argyle Ave., Ottawa, Ont.*

What is Buteo rufescentior Salvin and Godman?—In the 'Biologia Centrali-Americana,' Vol. III, p. 61–64, there is a considerable discussion of the Red-tailed Hawk, and the authors recognize all the races described at that time by American ornithologists. The following paragraph is of special interest. "In Western North America there is a large form which has been variously called by writers *B. montanus* and *B. calurus*. This bird has not apparently received a specific designation and we propose calling it *Buteo rufescentior*. It is slightly larger than true *B. borealis*, with much more rufous thighs, but has the blackish throat of that species, differing from it in having a reddish patch across the lower breast and abdomen, on which the black spots are conspicuous. This form extends from Sitka and British Columbia to California, and in the Henshaw Collection there are examples from Utah, Colorado, and New Mexico. Our collection also contains specimens from Zacatecas, San Luis Potosi, Colima, Jalisco, the Valley of Mexico, Vera Cruz, Guatemala, and Nicaragua." The true *B. calurus* of Cassin is further on, said to be very large and dark in color.

This is undoubtedly a valid description, but seems to have been completely overlooked, and Dr. Stone has kindly informed me that he does not know it. So now that a new A. O. U. 'Check-List' is in course of preparation, it seems advisable to bring this name to the attention of the Committee. The writer has no personal opinion about *Buteo rufescentior*, never having seen a specimen so named. From the range given it might apply in part to *alascensis* of Grinnell over which it has priority. Or it might well be one of the many puzzling phases of *calurus*.—Ludlow Griscom, *American Museum of Natural History, New York City.*

Snowy Owl (Nyctea nyctea) in Minnesota in Mid-summer.—On August 4, 1891, a young farmer caught a live female Snowy Owl in his field near the town of Madison. I kept it in captivity until August 7, when it died. Meat was offered every day during its captiviy but it refused to

eat. Its body was very much emaciated and in dissecting and making up the skin into a specimen, I found a No. 4 shot in one of its legs and the radius of one wing broken but healed again; also one of its eyes was injured.

Its plumage had a very strong skunk odor, but whether this skunk or the owl was the aggressor was the mystery.

It seems strange that so large and conspicuous an object should escape observation all summer on an open and well settled prairie, for it had been seen but once by another farmer the day before and near the place of its capture. No doubt it was a winter visitant of the winter before, wounded by an ignorant and thoughtless hunter, for it could not have traveled very far in its helpless condition.—ALBERT LANO, *Fayetteville, Ark.*

Notes on the Food of the Guacharo (Steatornis caripensis).—Some material illustrating the food habits of the Guacharo, collected in a cave in Huevos Island, May 5, 1893 by Dr. F. M. Chapman[1], was turned over to the writer who has attempted to identify its components. It is not the purpose of this article to discuss the abode and mode of life of this most interesting bird which have claimed the attention of several noted explorers and writers. But the best of the previous accounts of the Oil-bird's food may well be cited for the sake of comparison and in order to point out uncertainties due to changes in nomenclature of the plants concerned.

The Guacharo is vegetarian "quite in contradistinction" as Dr. L. Stejneger remarks,[2] "to the other Caprimulgoid birds, which are exclusively insectivorous, an interesting analogy to the two groups of frugivorous and insectivorous bats." The most detailed of the earlier statements relative to the food of this species is that of N. Funck published in 1845. He says[3]:

"Their food consists of various fruits in their seasons; I found in their stomachs palm fruits as large as the egg of a pigeon[4]; the fruits of *Aiphanas praga* (of Humboldt, Syn. Plant.); of the arboreal *Psychotria* of Caripé, as well as the seeds of *Laurus* and of *Achras*. After having digested the fleshy portion of these fruits, the birds regurgitate the stones." (pp. 373–4.)

It was chiefly these fruit pits that composed the material collected by Dr. Chapman, whose brief visit to the guacharo cave unfortunately was in total darkness due to drowning of his light, but Hornaday is quoted[5] as saying that at the time of his exploration of the same cave, the "rocks were covered with guano to a depth of several inches" and that the nests of the

---

[1] See Bul. Am. Mus. Nat. Hist. VI, 1894, p. 60.

[2] Standard Nat. Hist. IV, 1885, pp. 386-7.

[3] Bull. Acad. Bruxelles, XI, Nos. 11-12, 1844 (1845), pp. 371-7.

[4] Authors comment on the capacious nature of the entire alimentary tract of *Steatornis*.

[5] Stand. Nat. Hist. IV, 1885, p. 386.

Diabliton's as the species is also called were "formed of a brownish, spongy mass of considerable solidity, which apparently consisted of the undigested seeds and skins of fruits ejected from the mouth and mixed with the droppings of the birds."

Samples of the recent litter and of a consolidated almost cement-like deposit no doubt the same as that alluded to by Hornaday are at hand. The most numerous seeds in the collection are those of a palm of the genus *Euterpe*,[1] a species of which the Assai palm (*E. edulis*) is an important human food in Brazil. Several other palm seeds of the genus *Bactris* (tucum palm) also are present. Next in abundance to the palm pits are those of Lauraceae, the family including our familiar sassafras and spice bush. It is difficult to identify these seeds in their thoroughly desiccated condition, but it seems certain that both the general *Nectandra* and *Ocotea* are represented. Large pits of the tallow nutmeg (*Virola sebifera*) are prominent and it is remains of their hard shells (pericarp with its invaginations which traverse the endosperm) that almost exclusively make up the conglomerate referred to above. This may indicate a customary preponderance of this fruit in the diet of the Oil-bird, but possibly also may result from superior hardness and durability of the thick and re-enforced walls of these seeds.

Of the items mentioned by Funck *Aiphanes* is a palm that occurs in the region, but *Laurus*, now restricted to Old World plants, can be taken only as indicating the family, represented in the present material by the genera *Ocotea* and *Nectandra* previously mentioned. No fruits of *Achras*, one of the Sapotaceae, were included in Dr. Chapman's collection and as for *Psychotria*, unless the name was then applied to a very different plant from that now bearing the name, it is doubtful that Funck's reference to it is correct, for the fruits are very much smaller than the others habitually consumed by the bird. In view of the characteristic obesity of the Oil-bird it is not surprising that several of the fruits which are prominent in its regimen are noted for the unusual quantities of oleaginous substances they yield.—W. L. McAtee, *U. S. Biological Survey, Washington, D. C.*

Scissor-tailed Flycatcher (Muscivora forficata) in Northampton County, Virginia.—A fine male Scissor-tailed Flycatcher was secured on April 21, 1919, at Capeville, Northampton County, Virginia. This specimen was sent in to the Biological Survey by Mr. Fred Wall and is now number 270,322 U. S. N. M. (Biological Survey collection); this appears to be the third record for Virginia. I am indebted to the courtesy of Dr. E. W. Nelson, Chief of the Survey, for permission to publish this record.—B. H. Swales, *U. S. National Museum, Washington, D. C.*

[1] I am indebted to W. E. Safford of the U. S. Bureau of Plant Industry for help in naming the seeds.

Vermilion Flycatcher (Pyrocephalus rubinus mexicanus) in Eastern Texas.—On October 16, 1921, a well plumaged male Vermilion Flycatcher was killed by me, at Barrymore's Lake some forty-five miles from Houston, in the Brazos Bottoms near Brookshire, Texas. Dr. A. K. Fisher writes me that he thinks the record is valuable as "there is only one record so far east in Texas north of the Rio Grande Valley."—Robt. B. Lawrence, *411 Westmoreland Ave., Houston, Texas.*

The Evening Grosbeak at Mt. Holly, N. J.—On November 20, 1921 I saw a male Evening Grosbeak (*Hesperiphona vespertina vespertina*). These birds were here two years ago and this was the first appearance this far south since that time.—N. De W. Pumyea, *Mt. Holly, N. J.*

The Evening Grosbeak at Haverford, Pa.—On November 26, 1921, in a field near the grounds of Haverford College at about 7.30 o'clock of a gray, rainy morning my attention was attracted by a loud bird-note something like the chirp of an English Sparrow but much louder. At times it resembled a note of the Red-headed Woodpeccker although not so nasal. I located the bird in the top of a tulip-poplar. It was engaged in tearing to pieces the dry seed clusters of the tree. As it worked it constantly gave its loud chirping note. I had no field-glasses and at first could only note that the bird had a very short tail. It finally came lower down the tree and I was able to see its thick beak. It at last alighted on the ground not ten feet away from me and I was able to identify it beyond peradventure as a female Evening Grosbeak. It did not seem especially shy and fed on the ground for some time. Although it called in the tree it made no sound when on the ground, a peculiarity which I have noted in this bird before. Although it did not seem shy it suddenly without any apparent reason flew away, a habit which I have also noted before not only with single birds but with flocks. I hurried over to the house of a nearby bird-enthusiast and roused him out. By the time we came back some fifteen minutes later the bird was gone from its tree but I located it by its call where it was sitting in a cherry tree over a hen-house surrounded by chirping English Sparrows. My friend had just time to take a good look at it when it flew away.—Samuel Scoville, Jr., *Haverford, Pa.*

Evening Grosbeak at Scranton, Pa.—An Evening Grosbeak, (*Hesperiphona vespertina vespertina*), appeared in my garden on October 21, 1921. It sat on a small plum tree where I had an excellent view of it. It was a male bird and when it flew across the street into a tall maple I saw several other birds there which might have been females of the same species although I was not close enough to identify them positively. The few specimens we have in the museum were mostly obtained nearly thirty-two years ago at West Nicholson in Wyoming County about twenty miles from here. Since that time I have not heard of any Evening Grosbeaks in this part of the State.—R. N. Davis, *Everhart Museum, Scranton, Pa.*

The Cliff Swallow (Petrochelidon l. lunifrons) in Indiana.—On the Ratliff homestead situated just west of Richmond, Indiana, where the writer spent a portion of his life, was found a colony of at least thirty pairs of Cliff Swallows, whose irregular nestings covered a period of more than twenty-five years. The large farm buildings constructed with over-jetting roofs, with roughly-sawed rafters and eave boards, furnished desirable nesting sites for the "Mud Daubers."

A small boggy pond located but a few rods away from the barns furnished the mud that was used in the "adobe," bottle-shaped nests.

Large farm buildings similar to those on the old homestead, were found on neighboring farms, about the eaves of which the swallows nested. These structures were not so far from the before-mentioned pond, but were adjacent to a sluggish stream of water, Clear Creek, upon whose edges the particular kind of wet soil also abounded.

It was not generally known at that time, that it was a peculiar trait of this bird to not nest consecutively, year after year, at the breeding places. It was observed, however, that at times, perhaps a couple of years out of every five, at one or other of the farms, scarcely an individual bird would be seen. This was evidently counterbalanced, by the increased numbers, at the others.

About the year 1885, fire destroyed our barn buildings. And not long after, a similar fate befell the barn on the nearest adjacent farm. In rebuilding, machine-dressed lumber was used and the poor swallows, after repeated trials, had to abandon building their adobe nests, as the mud houses would break from their adhesions to the smoother lumber and fall to the ground. This, with the drainage of the pond, followed by agricultural cultivation, really left the birds nought but to seek other quarters.

A couple of farms, two or three miles away, to the north and along the Clear Creek streams, were selected, and from then until at present, the constantly diminishing numbers have been almost annually nesting. At present, but a mere half dozen pairs are seen.—Walter S. Ratliff, *Richmond, Indiana.*

Nesting of the Louisiana Water-Thrush in Massachusetts.—On June 9, 1920, at Huntington, Massachusetts, in company with E. R. Cross I visited a nest of the Louisiana Water-Thrush. We spent at least an hour in careful examination at close range of both adults and one of the young, which I held in my hands. The nest itself was so cleverly concealed that we might have been unable to find it had not the birds, feeding their young, disclosed its location. On the perpendicular moss-covered bank of a small spring brook the bird had hollowed out a place for the nest, the bottom of which was not more than six inches above the running water. The nest was invisible from above, but by getting down on hands and knees and by peering into the hole we could see the young.

While I was trying to get a good close look at one of the young birds,

they all left the nest. They were well feathered and able to fly eight or ten feet at a time. As the young left the nest the parent birds became greatly excited, creeping about on the ground with outstretched wings and chipping to attract attention away from their offspring.

The nest was composed outwardly of dead leaves, tightly compressed, and was lined with the round stems of grasses and fine black rootlets.—ALBERT A. CROSS,

The Short-billed Marsh Wren in the Montreal District.—Mr. H. Mousley's recent record of a Short-billed Marsh Wren (*Cistothorus stellaris*) taken at Hatley[1], drew my attention to the fact that it is the only published record of the occurrence of this wren in Quebec Province, and it is quite time that the erroneous impression regarding its status here should be corrected, as at least a few observers have been aware of its occurrence in the Montreal District for several years past.

In this locality the Short-billed Marsh Wren has a decided preference for sphagnum bogs—not so much the bog proper as the firmer ground about the bog margins, where there is a certain amount of free surface water and a fairly heavy growth of grasses and sedges. Here the silky tassels of the cotton-grass, waving above the lesser growth, are a familiar sight and one is more apt to find swamp laurel in greater abundance than bushes of Labrador Tea, which appears to thrive better in the yielding sphagnum. Clumps of alders are also commonly found with an occasional tamarack sapling and sometimes beds of cat-tails, while often there is a thicket of poplars and birches in the background. The intrusion of a rail or waggon road into the bog appears to create the proper environment as it is in such places that I have found the birds most commonly, which leads one to surmise that the road-beds antedated this Wren's arrival here. It was near a railroad that I first saw the Short-bill, frequenting the undergrowth about a drainage ditch that parallels the high-banked road-bed, skirting the margin of a five-mile stretch of intermittent sphagnum bog known as the "Bad-lands," and situated near St. Janvier in Terrebonne County, about eighteen miles from Montreal.

These "Bad-lands" (from the farmers' view-point) comprise a number of more or less open sphagnum bogs interspersed with wooded areas or islands. The tree growth is mainly black spruce and tamarack with patches of poplar and white birch. Almost the entire area, lying between some forested sand-hills and the Mascouche River, and extending for several miles in a north-easterly direction, is of this character.

Since my first view of this Wren, on June 18, 1911, I have seen it on various occasions in different portions of this area and I consider it common and well distributed in loose colonies. Although it is difficult to form even an approximate idea of the number of Wrens occurring there, I believe that one hundred pairs would be a low estimate.

---

[1] The Auk, 1918 and 1921.

On the above-mentioned date, in company with Mr. W. J. Brown, I noted twelve individuals—as nearly as it was possible to judge—actually, I saw only three of them as they have a mouse-like dread of casting shadows; in fact they are mouse-like in most particulars—even to building a mouse-like nest. All wrens are alike in one respect; when nest-building their great concern is to have an entrance through which only a wren can squeeze. As is well known wrens' nests are globular structures with side entrances. Even the House Wren, which has a tendency to depart somewhat from this habit, nesting in the hollow core of a stump, builds a roofed nest at the bottom of the cavity on which to rest the slender sticks that fill up any superfluous space in the entrance. So the House Wren, also, has a domed residence with a side-door.

One of the three birds seen was fairly conspicuous, perching for a minute or more in the top of a seedling tamarack, just within the shade of a clump of evergreens, where it clicked out its sputtering protest. Its mate (?), similarly engaged a short distance away, was seldom seen and never for more than a second or two. One could usually tell when the bird was in view by listening to its scolding as the muffled tone would grow gradually sharper, almost flinty, as the Wren slipped into view.

These alarm notes sound to me something like the syllables 'seet—sit—sit-it-it-it-it.' This utterance is not always exactly as I have written it; the pauses are variable in length, though not nearly so variable as in the alarm notes of the Winter Wren, which consist almost entirely of the syllable 'tchut' 'tchut' in a great variety of combinations, which often vaguely recalls the alarm note of the Song Sparrow. The notes of the Short-bill have been well likened to the sound produced by sharply striking one pebble with another, though this is more nearly true of the song notes.

After watching these birds for some time we decided that they were not going to give us any clue to the nesting-site and a thorough search was commenced which at length revealed the nest, almost resting on the moss at the base of a low kalmia bush. It was very loosely fastened to the bush and was fairly well hidden by surrounding grasses. In respect of being globular and having a side entrance it resembled the nest of the Long-billed Marsh Wren. Otherwise the loose construction and composition of very old grasses and sedges recalled nests of the shrew. Also it was resting practically on the ground, or moss. It contained two newly-hatched young and three addled eggs, two of which were cracked. As far as I could discover the lining consisted of down from poplar (?) catkins, a piece of fur-covered hare skin, and a few chickadee feathers.

On June 16, 1920, I saw a scolding individual in another locality a few miles distant, in a wet meadow within a cleared section of the afore-mentioned sand-hills. This bird was frequenting a bush-fringed drainage ditch in a low-lying part of the meadow where the grasses tended to grow in clumps. As I could find no other Wrens in the neighborhood it is probable that this bird was merely an overflow from the main bog colonies.

Visiting the north-eastern apex of this district, ten or twelve miles distant, on June 24, 1920, I counted nine individuals within a mile radius.

Coming to the present year (1921) my first note on this species was given to me by Mr. W. J. Brown who saw a large number (undetermined) on the 29th of May, in a sphagnum bog in Berthier County, about forty miles from Montreal. Mr. Brown was of the opinion that the Wrens had just arrived as a very small section of the locality was quite densely populated and they were not seen elsewhere. Here on June 17 I found the Wrens seemingly less numerous but better distributed, never noting more than two or three from any one point, although I recorded upwards of twenty individuals, and there were probably many more.

On my last visit to this district (August 21) I noted only four or five birds, apparently a family group, from which I secured a juvenile female.

There may have been others in the vicinity, in fact, judging by the scanty literature referring to this Wren's movements, it seems probable that no migratory movement had started at this date. Because one fails to see or hear this Wren is not necessarily proof of its non-presence. This is true generally of bog birds. This fact always calls to mind an occasion when a friend of mine was piloted to a bog, famous for its wealth of bird life. By a wet, miry route the bog was reached, evidently during a siesta, as 'scarce a bird was seen nor a bird-note heard' and my friend indignantly exclaimed, with much emphasis on the first word: "Now! where are your birds?"

In the district where the Short-billed Marsh Wrens occur there are at least nineteen species of summer-resident warblers, as well as many other birds, and yet, on certain days during the nesting season, I have walked for considerable distances in the open bog when there was scarcely a ripple of avian activity apparent. Sometimes a Marsh Hawk, gracefully skimming the surface of the bog, will be the only bird in view. The 'hide-and-seek' tactics of the smaller bog birds are probably due to the activities of this ardent hunter and to the forays of that arch-destroyer, the Sharp-shinned Hawk. Otherwise the bog has compensations in the matter of insect abundance and comparative lack of mammals, both human and four-footed. Also there is a dense carpet of mosses and other small growth with many canopied runaways which afford to the ground-haunting birds ample concealment and freedom of movement.

I find the Swamp Sparrow and Yellow-throat the most common nesting associates of the 'Short-bill,' while the Wilson's Warbler frequents nearby alder clumps. Another bird that one would scarcely expect to find here is the Savannah Sparrow. It is one of the common bog birds but adheres more closely to the level and seemingly meadow-like surface of the more open bog.

Such birds as the Junco, White-throated and Lincoln's Sparrow, and Yellow-Palm Warbler are usually found where there is less free water, amongst the bush-capped mounds and small spruce shrubs that gradually merge into the forest growth. Of these birds the White-throated Sparrow and Junco also occur commonly within the forest.

I have never seen the Long-billed Marsh Wren in these sphagnum bog haunts of the 'Short-bill'; in fact I know only of one inland locality in which it occurs—a wet grassy area encircling a pond and encircled by willow growth, situated near St. Hubert, about three miles from the St. Lawrence River.

The 'Long-bill,' however, is a rather uncommon summer resident in a few river marshes near Montreal. I have no doubt that further investigation will disclose the Short-billed Marsh Wren in other bogs in this portion of Quebec Province.—L. McI. Terrill, *44 Stanley Ave., St. Lambert, Que.*

The Short-billed Marsh Wren in Amherst, Massachuetts.—A pair of Short-billed Marsh Wrens (*Cistothorus stellaris*) were seen by us in a South Amherst marsh on July 16, July 27 and August 3, 1921. This bird does not seem to have been previously reported from Amherst. On both dates in July the male Wren sang and in August three birds were seen. They were in a wet meadow with a large brook at one side; the vegetation being a swamp grass. In a neighboring swamp on July 27, a Henslow's Sparrow (*Passerherbulus henslowi henslowi*) was watched at close range for some minutes while he treated us to his odd excuse for a song.—L. B. Nice and Margaret M. Nice, *Norman, Oklahoma.*

The Determination of the Type of the Genus Cistothorus Cabanis.—The third edition of the A. O. U. 'Check-List' gives monotypy as the means of arriving at *Troglodytes stellaris* Naumann as the type of the genus *Cistothorus* Cabanis (Mus. Hein th. 1, 1851 p. 77 note). It so happens, however, that the foot-note in which *Cistothorus* is erected by reference to *Troglodytes stellaris* Naumann, is continued on the succeeding page where a second species, *C [c]istothorus[s] interscapularis* Nordmann (& *Thryothorus polygottus* Vieillot, Nouv. Dict. Hist. Nat. 34, 1918, p. 59), is mentioned. This, of course, removes monotypy as the reason for assigning *T. stellaris* as the type of *Cistothorus*. The earliest designation for the type that I have been able to find is by Baird, 'Report of the Pacific Railroad Survey, Birds' 1858, p. 364, who designates *Troglodytes stellaris.*

The next edition of the 'Check-List' should, therefore, correct the present statement of type under *Cistothorus*, substituting "Type, by subsequent designation, *Troglodytes stellaris* Naumann (Baird 1858)."—J. L. Peters, *Mus. Comp. Zool., Cambridge, Mass.*

Mockingbird in Maine.—I was much interested in the article on the Mockingbird in the July 'Auk.' I can add one more record for the state of Maine. Mrs. E. Josephine Runnels of Brunswick, Maine, writes thus: "We first heard the bird singing February 8, 1921, and thought it a Catbird. The next day we saw the white markings and called it a Mockingbird although we could not believe it was one so far north and in February.

However it proved to be, and remained with us till April 8. He stayed in and about a brush-pile most of the time going away for ten or fifteen minutes and then back again. He seemed rather fond of being looked at, not at all shy. He sang a great deal, at first not so loud and frequently. Mr. Runnels put up a feeding board for him. He had been feeding on buckthorn berries driving away Robins that came to feed on them, and apples that were left on the trees. We put various foods on the board but of all we put out he liked doughnuts best. Would not touch canned fruits or nuts,—that is peanuts or walnuts. We also put out a dish of water from which he drank but we never saw him bathe. When we called him he would often come out of the brush pile evidently to see what the noise was. He disliked the Robins but the Song Sparrows he seemed to enjoy. Both would be singing on the same brush pile at the same time."

Prof. Gross of Bowdoin College identified this Mockingbird and also some who had seen Mockingbirds in the south.—CARRIE ELLA MILLER, *Lewiston, Me.*

The Hermit Thrush (Hylocichla guttata pallasi) as a Summer Resident in New Jersey.—On July 11, 1921, I visited for the first time the observation tower on Bearfort Mountain above Cedar Pond, near Newfoundland, New Jersey. The tower is situated on the rocky ridge of the mountain at an altitude of 1400 feet. While on the wood-path immediately below the summit I attracted a number of birds by "squeaking" and among them, to my surprise, was a Hermit Thrush. It suddenly appeared on a branch in front of me and gave me an excellent view, raising its rufous tail in characteristic fashion. Search of the locality the next afternoon proved fruitless, although a brief snatch of the Hermit's song was probably heard in the distance.

A second visit to the region was made later in the month, and on July 23 I had the good fortune to find a pair of Hermit Thrushes in the same spot in which the first bird had been seen. The male sang for several minutes at about sunset. On the 25th at least one of the birds was again seen and a few strains of song heard. On these last two occasions all four call-notes of the species were heard.

That this was a pair of breeding birds there can be no reasonable doubt. Their presence in the same spot during at least the greater part of the month, their evident uneasiness while I was in the vicinity, and the actions of one bird which sat for some minutes with food in its bill, all indicate that they were nesting. Although I had spent considerable time in this region in previous years, the Hermit Thrush had never before been observed in the breeding season and there can be no doubt that as a summer resident the species is rare and local.—W. DEW. MILLER, *American Museum of Natural History, New York City.*

Notes from Lyme, Connecticut.—Two female Blue-gray Gnatcatchers (*Polioptila caerulea caerulea*) were seen by Dr. L. B. Nice and myself, August 17 and 18, 1921, on Lord Hill, Lyme, Connecticut. They came to a black cherry tree only a few yards from the house where we were staying; they were tame and allowed a close approach. Both of us are very familiar with these birds as they are common in southern Ohio and Oklahoma. In Sage, Bishop and Bliss' 'Birds of Connecticut' the Blue-gray Gnatcatcher is listed as a "very rare summer visitant."

Two Red-breasted Nuthatches (*Sitta canadensis*) were seen on August 24, 1921, three days earlier than their earliest fall arrival as recorded in 'Birds of Connecticut.' Myrtle Warblers (*Dendroica coronata*) were three weeks ahead of time for their earliest arrival is reported as September 14. We saw five on August 24, 1921, two in Norway spruces on Lord Hill and three eating bayberries by the Connecticut River. The migration of these birds may have been hastened by the cool weather of August.—Margaret M. Nice, *Norman, Okla.*

Some Interesting Dates of Occurrence near New York City.—During the last year or two of observation near New York City, unusual dates of occurrence for the following birds have been noted.

Pandion haliaetus carolinensis. Osprey.—Mastic, Long Island, N. Y., November 1, 1920. Two individuals. Several birds were seen on the two preceding days. This date, therefore, probably marks the end of the southward movement of this species.

Icteria virens virens. Yellow-breasted Chat.—Mastic, Long Island, N. Y., October 31, 1920. One individual. This is a purely casual record. The species should not be present after early October.

Toxostoma rufum. Brown Thrasher.—Central Park, New York City, February 14, 1920. One seen. One bird, probably the same individual, was seen about a week later in the same locality.

Telmatodytes palustris palustris. Long-billed Marsh Wren.—Pelham Bay Park, New York City, February 26, 1921. One individual. Observation made with Mr. R. V. Bennett.

Sitta canadensis. Red-breasted Nuthatch.—Great Neck, Long Island, August 19, 1921. One individual. This date is the earliest fall record for Long Island, except for one in July some years ago that seems only casual.—Laidlaw Williams, *New York City.*

Winter Notes from Montauk Point, Long Island.—Montauk Point has long been known as an ornithological bonanza. Jutting far out into the ocean it attracts many rare stragglers, and seems a highway for migration. In winter the milder climate and dense cover attract a suprising number of land birds, while water fowl of many different kinds throng its shores. As a locality for intensive field work it would well repay the investigator, but this has never been done. Many people have made short trips there,

and the majority of the birds recorded from Long Island have been noted there, sufficient evidence of its ornithological possibilities. The winter bird life is the least known, and consequently the most interesting. The hotels are closed, the train service is wretched, the landscape is bleak, and a long walk of eight miles is required to reach the Point, the most interesting spot, by the most direct route. For water fowl the North Shore which is steep and rocky is by all odds the best section, and it is a good thirteen miles by this route to the Point. The South Shore is a broad beach and there are comparatively few birds there. The interior is very hilly with dense tangles of bayberry and briars, a huge territory which it would take a week to cover, and where the going is difficult.

The writers were in the Montauk Point region January 1 and 2, 1921, and February 20–22. The list of birds seen January 1 was published as a 'Bird Lore' Christmas census, and gives an excellent idea of the richness of the bird life, but lack of space prevented all but the briefest notes, and some of the rarities observed require further comment. February 20 and 21 were practically lost days, as a blizzard was raging, but the 22nd was a superb day, which more than atoned for the others.

1. **Cepphus grylle**. Black Guillemot.—A few minutes after leaving the station at Montauk on January 1 a Black Guillemot in the white winter plumage was seen fishing off a wharf, about 50 feet from shore. We were on a bluff about 20 feet high just aobve it, and watched it diving and feeding for 15 minutes. The red feet were plainly visible when it dove, and even the red lining of the mouth was seen when it swallowed some food. Later on another bird was seen flying by the Point. As this was the second record for Long Island, the next day was devoted to an effort to collect the first bird noted, as well as an Arkansas Kingbird seen on the beach. Unfortunately the weather had changed overnight to a southwest gale with intervals of pouring rain. The Kingbird could not be found at all, but the Guillemot was discovered a few hundred yards from where it had been the day before, but so far out in so rough a sea that collecting it was out of the question. On February 22 probably the same Guillemot was found in exactly the same place. It was feeding just off shore, but swam out of range as soon as it perceived us. A half hour's wait behind an improvised blind brought the bird just within possible gun shot range, but while the shot scattered all around, the bird was untouched and went way out to sea for good. It is unusual for observers to depreciate their own observations, but we believe the rarity of the Black Guillemot on Long Island to be more apparent than actual. The thirteen miles of north shore of Montauk Point is typical country for this bird, whose habits we know well in life, and there is no good reason other than lack of observation to account for its alleged rarity. Elsewhere on Long Island its occurence would be purely casual.

2. **Histrionicus histrionicus**. Harlequin Duck.—On February 22 after the blizzard a pair of these ducks were found in a little cove just west

of the Point, and just a little off-shore. The adult male was, of course, absolutely unmistakable. We do not see how it could be confused with any other water bird. In addition to its bizarre coloration we noticed that the tail was held cocked up in the air, a striking habit in life. The female is certainly an obscure little duck, and would require close range and a good light to identify when alone. Again we see no reason why this duck should not occur at Montauk Point occasionally. Severe winters are supposed to bring the northern water fowl southward, but last winter was remarkably mild and open.

3. **Erismatura jamaicensis**. Ruddy Duck.—Two seen on Fort Pond January 1, and another on a small pond near Great Pond on February 22. This duck is very rare in winter on Long Island, and we know of no recent records.

4. **Fulica americana**. Coot.—A single bird seen on February 22 in the same pond with the Ruddy Duck. Another very rare bird in midwinter on Long Island.

5. **Tyrannus verticalis**. Arkansas Kingbird.—We were properly astonished to see a healthy specimen of this species busy catching insects on the north beach January 1, using bits of driftwood as observation posts. Insects were abundant, and it was having no difficulty in securing a meal. It was extraordinarily tame, allowing an approach to within 50 feet, and Crosby almost hit it with a pebble. Every possible detail of plumage was noted including the color of the outer tail-feathers, thus positively eliminating Cassin's Kingbird. It flitted up the beach just ahead of us for nearly a mile, before we left it behind. As already related it could not be found the next day in the heavy rain and high wind. It seems advisable to add that Griscom was well acquainted with this species in life, and Crosby with Cassin's Kingbird. The date is, of course, remarkable, but the mild and open fall accounts for it, as well as for the Ruddy Duck, Tree Swallows, Catbird, Thrasher, and Mourning Dove seen on the same trip.—Ludlow Griscom, Maunsell S. Crosby, and E. R. P. Janvrin, M. D., *New York City.*

Notes on crossing the Mexican Gulf from Key West to Galveston.—April 4, 1921. Left Key West on the Mallory line S. S. "Concho" at 4.30 a. m.

7.30 a. m. A few Royal Terns and a Man-o-War bird or two. Flying fish in large numbers.

9. a. m. A Kingfisher came aboard.

6. p. m. Three Boobies high overhead.

6.30 p. m. A smallish *Buteo*, (it looked like (*swainsoni*), a very small Sparrow-hawk, and a small *Dendroica* (*discors?*). All came from the south and carried on due north.

April 5, 10 a. m. A young Pomarine Jæger hovering over a big trolling Squid we have behind.

2. p. m. A young Herring Gull with a broken leg—no other birds seen all day.

April 6. Very hot day.

7.a. m. Two Herring Gulls adult and young.

8.30 a. m. A Grasshopper Sparrow came low over the waves from the south and seemed barely able to make the ship, very weak and humped up but able to pick up crumbs from the scuppers.

11. a. m. Out of the Gulf stream into the dirty water of the Mississippi.

1. p. m. A number of Herring Gulls adults and young. The Grasshopper Sparrow is sticking to the ship.

5. p. m. Arrived at Galveston, crowds of Laughing Gulls and other water-fowl.

The Grasshopper Sparrow still aboard.

Summary.—The dearth of sea birds was most noticeable. Of interest is the fact that a bird with such small powers of flight as a Grasshopper Sparrow should migrate across the Gulf, probably from the northern point of Yucatan.

Also the migration of a Sparrow-hawk out to sea; this might have been a Cuban Sparrow-hawk or else the Small Florida form; it looked too small for the typical subspecies.—ALLAN BROOKS, *Okanagan Landing, B. C.*

Additions to the Summer Avifauna of Lake County, Minn.—If Lake county, Minnesota, with its area of 2,399 square miles, be divided from north to south into four approximately equal parts, the region covered so excellently by Prof. Johnson[1] in his bird list of that county would occupy the second most northerly division. The present writer has spent a portion of two summers in what would be the northern section, immediately adjoining, but not overlapping, the territory covered by Prof. Johnson. This section extends across the entire width of the county, and is bounded on the south by the north branch of the Kawishisi river and its connected lakes, and on the north by the International boundary waters. The bulk of the list compiled in this region by the writer is practically a duplication of the one already published for the more southerly region, with a few minor exceptions. Some species reported by Prof. Johnson have not yet been found, tho they no doubt occur: Golden-eye, Wood Duck, Pigeon Hawk, Arctic three-toed Woodpecker, Whip-poor-will, Hudsonian Chickadee, Savannah Sparrow and Lincoln's Sparrow. The following species, not recorded in the published lists were found during July and August, 1920 and 1921, and are therefore offered as further additions to the summer avifauna of Lake County.

1. **Mergus serrator.** RED-BREASTED MERGANSER.—Seen quite frequently on Birch, Canadian Carp, Knife, Eddy, Newfoundland Wind

[1] Johnson, C. E., Summer Bird Records from Lake County, Minn.; Auk, vol. XXXVII, Oct. 1920. Also: Addition to the Birds of Lake County, Minnesota, Auk, vol. XXXVIII, Jan. 1921, pp. 124-126.

lakes. On Knife lake, July 30, a female and nine young were found. Less common than *M. americanus*.

2. **Nettion carolinense**. GREEN-WINGED TEAL.—Fall, Basswood, Birch, Seed, Portage and Knife lakes. Seen here between July 7–13, but present only on Knife lake on my return July 30–August 5. No evidence of breeding.

3. **Querquedula discors**. BLUE-WINGED TEAL.—Seen commonly in the same region as the Green-winged Teal, but much more abundant. A number of broods of young were seen about Seed and Portage lakes, as well as the west end of Knife lake.

4. **Marila americana**. REDHEAD.—A single individual seen on Wind lake, August 12, 1920, may well have been accidental, as the species is certainly not common in the region in the summer.

5. **Marila affinis**. LESSER SCAUP.—This species of Bluebill was found to be of more or less general distribution in the larger lakes of the boundary waters. In August 1920, it was found on Wind, Moose, Newfound, Ensign and Insula lakes. Twenty-one records during July, 1921.

6. **Fulica americana**. COOT.—Birch lake, Aug. 1, one; two on Wind lake, Aug. 4. The rocky country about the larger lakes is entirely unsuited for the breeding purposes of this species.

7. **Oxyechus vociferus**. KILLDEER.—Three were seen at Carp portage on August 1, and several at the north end of Fall lake August 5. Breeds in suitable localities.

8. **Haliæetus leucocephalus leucocephalus**. BALD EAGLE.—A pair of these birds, in full plumage, were seen at very close range on August 1, on the north shore of Knife lake. The male was flying and carrying a fish. The country is ideal for breeding.

9. **Strix varia varia**. BARRED OWL.—Seen once in Merriam bay of Basswood lake, July 9, but heard a number of times throughout the region of the boundary waters. Undoubtedly a breeding species.

10. **Dryobates pubescens medianus**. DOWNY WOODPECKER.—One at Eddy lake July 12; several about the smaller lakes between Ogishke, Muncie and Eddy lakes. On an island off the tip of United States Point in Basswood lake a pair was found breeding in a dead cedar stub, July 9.

11. **Melanerpes erythrocephalus**. RED-HEADED WOODPECKER.—At Knife portage, July 13, a pair was found nesting, and the young could be heard down in the nest. Seen also on the portages to and from Wind lake, north end of Newfound, Bass, Jordan and Ima lakes.

12. **Chætura pelagica**. CHIMNEY SWIFT.—Found breeding in a dead pine at Carp portage July 10, and the old birds and three young were flying about when the portage was re-visited on August 1. Seen often over Fall lake, these birds undoubtedly breeding in the chimneys of Winton.

13. **Molothus ater ater**. COWBIRD.—Several seen about the Indian clearings in Grass bay of Basswood lake, August 4.

14. **Euphagus carolinus**. RUSTY BLACKBIRD.—Not seen until

August 1, on Knife lake. After this date, three small flocks were seen, all evidently migrants.

15. **Pipilo erythrophthalmus erythrophthalmus**. TOWHEE.—A single male in song at Carp portage, July 10, is the only record for the region.

16. **Passerina cyanea**. INDIGO BUNTING.—On Eddy lake, July 12, a male in full song; Little Knife portage July 14, a male and female, the female carrying food; Bass lake August 6 (1920) a full plumaged male.

17. **Dendroica aestiva aestiva**. YELLOW WARBLER.—Fall lake portage July 8, a male in song; Merriam bay, of Basswood lake, several on July 9; Carp portage, male and female.

18. **Telmatodytes palustris palustris**. LONG-BILLED MARSH WREN.—While sitting one evening on the shore of Eddy lake (July 12) a male of this species hopped up on a rush within five feet of me and burst into full song. The only specimen seen.

19. **Sitta carolinensis carolinensis**. WHITE-BREASTED NUTHATCH.—Fall lake portage, July 8, one; Carp portage, July 10, one; Knife portage, August 1, five, apparently a whole family.

20. **Hylocichla fuscescens fuscescens**. VEERY.—Seen only once, Otter-track lake, July 14, but heard many times throughout the weeks in the woods. In 1920 heard only on the Kawishiwi river. Probably breeding.

21. **Sialia sialis sialis**. BLUEBIRD.—Seen at Carp portage July 10, and again near the indian clearings, Grass bay, Basswood lake, August 4. Breeds in suitable localities.—ALVIN R. CAHN, *College Station, Texas.*

On Accipiter chionogaster venezuelensis.—The description of this new form was published in 'The Auk', July 1921, p. 358, which did not appear until October. It is therefore predated by the publication of the subspecies in my 'Synopsis of the Accipitres,' pl. 1, p. 58, published Sept. 28, 1921.— H. KIRKE SWANN, *London, England.*

RECENT LITERATURE.

Bent's 'Life Histories of North American Gulls and Terns.'[1]—This, the second of Mr. Bent's series of 'Life Histories,' is fully up to the standard of its predecessor, and surpasses it in interest from the fact that the species treated are birds with which a larger number of ornithologists have had personal experience.

[1] Smithsonian Institution | United States National Museum | Bulletin 113 | Life Histories of North American | Gulls and Terns | Order Longipennes | By | Arthur Cleveland Bent | of Taunton, Massachusetts | (Seal) | Washington | Government Printing Office | 1921. 8vo. pp. I–X + 1–340. pll. 1–93, (78–93 in color).

The plan of the work was so fully described in our review of the 'Life Histories of the Diving Birds' that it is needless to make further mention of it here except to commend the care and perseverence of the author in bringing together the illustrations and data which have been used to supplement his own wide experience with the gulls and terns. The volume, like its predecessor, will be a work of reference which must needs be constantly within reach of every ornithologist, be he writer or editor, field-naturalist or museum curator. While according the author every praise for his part in the production, we regret to be again compelled to criticize the use of paper so thin that the appearance of the text is ruined, and the frequent unfortunate arrangement of the eggs in the otherwise excellent colored plates, which by presenting them in different positions on the same plate spoils the effect and renders them less easily comparable.

We wish Mr. Bent all speed with his work, and would urge the cooperation of all ornithologists who are in a position to help him.—W. S.

Chapman on New South American Birds.[1]——As a result of Dr. Chapman's recent visit to the British Museum he has been able to definitely determine as new several birds obtained by the South American expeditions of the American Museum of Natural History which had to be compared with types preserved in the former institution. He also describes some new forms obtained by the recent Anthony-Cherrie expedition to Ecuador. The proposed new forms are as follows: *Nothocercus fuscipennis* (p. 1), Popayan, Colombia; *Penelope barbata* (p. 3), Taraguacocha, Prov. del Oro, Ecuador; *Siptornis wyatti aequatorialis* (p. 4), Mt. Chamborazo, Ecuador; *Odontophorus parambae canescens* (p. 4), Alamor, Prov. Loja, Ecuador; *Nyctibius longicaudatus chocoensis* (p. 5), Novita, Choco, Colombia; *Picumnus parvistriatus* (p. 6), Daule, Prov. Guayas, Ecuador; *Thamnophilus zarumae* (p. 6), Zaruma, Prov. del Oro, Ecuador; *Automolus celicae* (p. 10), Celica, Prov. Loja, Ecuador; *Basileuterus fraseri ochraceicrista* (p. 11), Chone, Ecuador, and *Sporophila insulata* (p. 12), Tumaco, Colombia. There are also described from the Museum Goeldi, *Pachysylvia fuscicapilla albigula* (p. 11), Sta. Julia, Brazil; from the U. S. National Museum *Leptasthenura xenothorax* (p. 8), Urubamba Valley, Peru; and from the British Museum *L. s. cajabambae* (p. 9), Cajabamba, Peru.—W. S.

Mathews' 'The Birds of Australia'.[2]—Part 4 of Volume 9 covers the genera *Karua, Sphecotheres, Orthonyx, Macrorthonyx,* and *Cinclosoma.* Following Pycraft the author removes *Sphecotheres* from the Oriolidae,

[1] Descriptions of Proposed New Birds from Colombia, Ecuador, Peru and Brazil. By Frank M. Chapman. Amer. Mus. Novit., No. 18. September 22, 1921. pp. 1–12.

[2] The Birds of Australia. By Gregory M. Mathews, IX, Part 4. pp. 145–192. October 19, 1921.

but instead of placing it in the Campophagidae he places it in a new family, Sphecotheridae, next to the latter. This family name would appear to be proposed here for the first time although there is nothing in the text to indicate it, the entire text leading one to infer that he is placing the genus in the Campophagidae. For the two genera of Log-runners he proposes the family Orthonycidae but what disposition he intends to make of *Cinclosoma* is not clear. As the text stands it is included with the Log-runners but the page heading over each species reads "Family Cinclosomatidae." Possibly a section of text covering this family was accidentally omitted. It is unfortunate that such an important work should be marred by such slips as these which leave the reader at a loss to know just what the author's views may be.

Papuorthonyx (p. 177) is proposed as a new genus for *Orthonyx novaeguineae.*

The plates and text are fully up to the standard of the work.—W. S.

Van Oort's 'Birds of the Netherlands.'[1]—Part 9 of this notable work consists, like its predecessor, entirely of plates. There are ten in all, six of ducks, one of a shearwater—*Puffinus puffinus yelkonan* and three of Marsh Hawks.—*Circus cyaneus and pygargus.* The ducks are the Eider, of which there is besides the one of the nuptial plumages, another showing the eclipse dress and the molting condition leading up to it; the White-headed Ruddy Duck, the European Merganser, Red-breasted Merganser and the Smew. The importance of this work to American ornithologists is evident when we realize that almost all of the excellent plates in the present part represent American forms or those very closely related to them and we do not know where a more satisfactory series of illustrations of duck plumages can be found.. The text to these parts will follow later.—W. S.

Howell's 'Biological Survey of Alabama'.[2]—This pamphlet based upon the field work of Mr. Howell and his assistants in practically all parts of the State, contains a detailed report on the mammals and a brief preliminary consideration of the "Physiography and Life Zones" of the State, with a number of photographs and a colored faunal map.

The report on the birds is reserved for a separate publication but lists of the characteristic breeding species of the Upper and Lower Austral Zones, the only two life zones traversing Alabama, are given in the present connection.

Failure to follow the A. O. U. 'Check-List' in this and other publications of the Biological Survey seems unfortunate. Most readers will be con-

[1] Ornithologia Neerlandica. De Vogels van Neerland door Dr. E. D. Van Oort. Afl. 9. Martinus Nijhoff. The Hague. 1921.

[2] A Biological Survey of Alabama. I. Physiography and Life Zones. II. The Mammals. N. A. Fauna, No. 45. U. S. Biological Survey. October 28, 1921. pp. 1–88, pll I–XI.

fused to find *Quiscalus quiscula quiscula* which is the Purple Grackle of the 'Check-List' applied to the Florida Grackle and the Florida Red-wing called *Agelaius phoeniceus phoeniceus*. Some departures from current nomenclature have the 'Check-List' equivalents in the foot notes but by no means all of them, and even then the misleading expression "formerly known as," is used, while as a matter of fact they *are still* the current names so far as any standard exists. If everyone is going to exercise his own preference in the matter of names why should we have a check list or strive for uniformity? It is discouraging to find the Biological Survey, which has done so much to advance American Ornithology, so easily led into this mad rush to be "up to the minute" in nomenclatural technicalities without waiting to see whether the proposals are going to receive general acceptance, and thereby rendering their publications ambiguous to the general reader.

For this, however, Mr. Howell is probably not responsible. He has furnished us with an authoritative and much needed treatise on the distribution of life in a much neglected State, while his report on the mammals is so admirable that we look forward with impatience for the appearance of that on the birds.—W. S.

Holt on the Avery Bird Collection.[1]—This little brochure consists of a catalogue of the specimens contained in the collection of birds formed by the late Dr. Wm. Cushman Avery and now in the Alabama Museum of Natural History. To these data Mr. Holt has added excerpts from Dr. Avery's field notes and from publications of his which appeared in the 'American Field' and the 'Ornithologist and Oologist,' the whole forming quite a complete catalogue of the bird life of Greensboro and vicinity where his investigations were carried on. No less than 216 species are listed.

There is a biographical sketch of Dr. Avery by his sister Miss Mary E. Avery and a portrait.—W. S.

Chapin on Congo Birds.[2]—In studying his Congo collection Mr. Chapin has come upon a number of interesting things which are here placed on record in advance of his main report.

A new species of *Buphagus* is described from Zambi, Lower Congo as *B. langi* (p. 4), and the subgeneric term *Buphagoides* is proposed for *B. erythrorhynchus*. *Nectarinia congoensis* he considers to be restricted to the region above Irebu on the forested banks of the Congo where he rediscovered it. *Neolestes* he regards as a Pycnonotid confirming Gadow's view and considers *Nicator* "as near to the Pycnonotidae as to any member

[1] Annotated List of the Avery Bird Collection in the Alabama Museum of Natural History. By Ernest G. Holt. Museum Paper No. 4. Alabama Mus. Nat. Hist., 1921. pp. 1–142.

[2] Notes on a New Ox-pecker and other Little-Known Birds of the Congo. By James P. Chapin. Amer. Mus. Novit. No. 17. Sept. 16. 1920. pp. 1–16.

of the Malaconotinae." The juvenal plumage of *Sigmodos* is discussed and another locality, on the river Dungee, for the Cliff Swallow *Lecythoplastes preussi* is recorded. A number of extreme eastern records for West African birds are also listed.—W. S.

Phillips on Species Crosses in Birds.[1] The present paper is a summary of Dr. Phillips' experiments in hybridizing ducks and pheasants up to the year 1917, when the work was abandoned on account of the exigencies of the war. He states that there has been "an impression that there is seldom anything approaching a Mendelian phenomenon in species-mating among birds." "But" he says "definite types of segregation do occur, dependent upon the degree of relationship of the genetic constitution." Dr. Phillips had already suggested in 1915 that in closely related forms there is, under experimental conditions, a closer approach to orthodox Mendelism than in crosses between more widely separated species.

The Mallard × Florida Duck crosses he says "constitute the most extreme example of segregation thus far discovered in species crosses" in either ducks or pheasants. Genetically the Florida Duck represents substantially a Mallard with the male secondary sex characters not expressed, and by the breeding test is more closely related to the Mallard than either the Black Duck or the Australian Duck.—W. S.

Mailliard on the Birds and Mammals of Siskiyou County, California.[2]—The present paper is based upon field work conducted by Mr. Joseph Mailliard and two assistants in the interests of the California Academy of Sciences, in Siskiyou County, California, May 10–June 16, 1920. The main portion consists of an itinerary with notes on various species and comments on records in earlier publications.

In conclusion there is a table of all of the species of birds observed by the party with records at seven localities. The whole forms a valuable contribution to the ornithology of northern California.—W. S.

Aves in the Zoological Record.[3]—Mr. W. L. Sclater has again compiled the bird section of the 'Zoological Record' for 1919, which appeared in August 1921. The list follows the same plan as its immediate predecessors and is characterized by the painstaking care which marks the author's work. We find 837 titles listed of which no less than 39 are by Oberholser. Chubb with 13 and Witherby with 11, are the only other authors who have published more than 10 papers within the year.

---

[1] A Further Report on Species Crosses in Birds. By J. C. Phillips, Genetics, VI, pp. 366–383, July, 1921.

[2] Notes on the Birds and Mammals of Siskiyou County, California. By Joseph Mailliard. Proc. Calif. Acad. Sciences, XI. No. 5, pp. 73–94. July 11, 1921.

[3] Zoological Record Vol. LVI, 1919. XVII Aves, W. L. Sclater, M. A. Zool. Soc. London. Sold at their House in Regents' Park, London, N. W., 8. Price 6s. August, 1921. pp. 1–71.

We have frequently urged the importance of supporting such an invaluable publication as the 'Zoological Record' without which the nomenclature of systematic zoology would become more or less chaotic, and its progress greatly hampered. The condition that now faces us is critical. Since the suspension of the 'International Catalogue of Scientific Literature' the Zoological Society of London has been publishing the 'Record' at a constantly increasing cost which has now reached approximately £2000 annually. It has undertaken the publication of the volume for 1920 and is sending out blank forms, soliciting subscriptions for that of 1921. If the response is not liberal the publication cannot go on. The subscription price of the entire volume will be £2.10s. and of the 'Aves' section 7s 6d. The British Museum has subscribed for six copies of the 'Record' and it seems as if several of the larger museums of America could do likewise, while *every* museum and university should have one copy and every systematic ornithologist should become a subscriber to the 'Aves'. The progress of ornithology depends upon the continuation of this yearly record of what has been published.—W. S.

Grinnell's 'The Principle of Rapid Peering in Birds.'[1]—Dr. Grinnell divides birds into two groups, those which wait passively for the appearance, within reach, of moving objects of food value, and those which are more or less constantly in motion seeking items of food which are stationary. He considers that there is no such thing as "excess-of-vigor" and "'joy-of-living" as they are used to explain the lively, joyous actions of many birds, and that an adequate explanation of such activity, involving stern utility should be looked for. He finds that an object moving at a distance is easily picked up by the human eye but a stationary object, like a golf ball in the grass for instance, is looked for by constant, movement of the searcher and, within certain limits, the greater the activity, the sooner the object will be found. It is moreover the rapid movement of the eye as much as anything else that brings success. With birds the critical food period is winter and the nervous activity of birds like Kinglets at this season is really the intense effort to find enough food to satisfy their needs, in which the principle of "rapid peering" plays a most important part. Dr. Grinnell's explanation is ingenious and doubtless correct, while it is an excellent illustration of the attitude of mind necessary to study problems of animal behavior.

Incidentally he refers to such "humanistic terms" as "joy-of-living" being often used "even in our more serious ornithological literature." We question (and doubtless Dr. Grinnell will entirely agree with us) whether there is not a perfectly proper side of ornithology that without humanizing the birds to the ridiculous extremes that some popular writers have done, and without entering the field of ornithological romance,

[1] The Principle of Rapid Peering in Birds. Univ. of Calif. Chronicle, XXIII, No. 4, October, 1921 pp. 392–396.

makes use of such terms as this in giving us a word picture of the bird and its activities that could be accomplished in no other way. Indeed Dr. Grinnell's very use of such terms shows us clearly just what activities he is going to explain in terms of "stern utility."

Bereft of all such terms what would be left of the writings of Audubon and hosts of others which have their place in serious ornithological literature as much as the equally serious studies of animal behavior which latter however have sometimes but little "literary" claims.

All of this however has no bearing on the excellence of Dr. Grinnell's paper.—W. S.

Murphy on the Seacoast and Islands of Peru.[1]—The seventh instalment of Dr. Murphy's account of his recent expedition to Peru describes Asia Island and the visit to Callao. The destruction of tens of thousands of Cormorant nests by the Condors is described and the necessity on the part of the Guano industry to kill off these noble birds when pillaging the islands is admitted. A number of interesting pictures of cormorants, penguins, etc., from photographs illustrate the article.—W. S.

Kirke Swann's 'Synopsis of the Accipitres.'[2]—Part one of a Second Edition of Mr. Swann's 'Synopsis' has appeared, "revised and corrected throughout," and with all new forms described up to 1920. It follows the plan of the first edition, the present instalment covering *Vultur* to *Accipiter*.—W. S.

Sewerzow on the Zoogeography of the Palaearctic Region.[3]—This pamphlet is a reprint of a communication presented before the Russian Geographic Society in 1877, and which showed an understanding of the subject on the part of the author far in advance of his time. He divides the region into two parts Boreal and Austral, the former containing the Polar; Northern Wooded Zone (including the North-European, Ural-Siberian and East Siberian Provinces) and Intermediate Zone, (including the Middle European, Ural-Arabian and Drurian Provinces). The Austral sub-region contains the South-West Zone (Atlantic and Mediterranean Provinces) and the Desert Zone, (Lybian, North African, West Asian, Middle Asian, Thibetan and Sind Provinces). He has in addition

[1] The Seacoast and Islands of Peru, VII. By Robert Cushman Murphy. Brooklyn Museum Quarterly, October. 1921, pp. 142–155.

[2] A Synopsis of the Accipitres (Diurnal Birds of Prey). Part I (Vultur to Accipiter). By H. Kirke Swann. Second Edition, revised and corrected throughout. Sept. 28, 1921, pp. 1–63. Price 6s. Wheldon and Wesley Ltd., 38 Great Queen St., Kingsway, W. C. 2., London, England.

[3] Uber die Zoologischer (hauptsächlich ornithologischen) Gebiete der ausserhalb der Tropen gelegenen Teile unseres Kontinents. Von Nikolai Sewerzow. Ubersetzt und eingeleitet von Hermann Grote. Mit einem Bildnis Sewerzows. Dultz and Co. Munchen. 1921 pp. 1–32.

an East-Asiatic or Chinese-Himalayan Region, which might, he thinks, be as well regarded as a sub-region of the Palaearctic, and which includes the Himalayan, Sifanian, North Chinese and Japanese Provinces. The characteristics of the various provinces are discussed, mainly from an ornithological standpoint and the editor, H. Grote has a short biography of Nikolai Sewerzow with a portrait.—W. S.

Bannerman on First Impressions of Tunisia and Algeria.[1]—In the introduction to this admirable little sketch Mr. Bannerman apologizes for the fact that it contains "nothing new" and "is merely the account of a journey through Tunisia and Algeria which some ornithologists have already made and doubtless many others will make in the future." Many more we might add will never have the opportunity to make the journey and they especially will welcome Mr. Bannerman's first "impressions."

Annotated lists, valuable as they may be, give one no idea of the country they treat of, or of its bird life as a whole, and the author who has exhaustively studied a region forgets his first impressions. There is therefore a very definite value to this sort of paper and we commend it to all who would like to know just what they would see as they enter Tunisia and pass on to the edge of the great Sahara.

The electric train from Tunis to Carthage follows the shore of the Lac de Tunis, where one may see from the car windows flocks of Flamingoes stalking about, and a variety of shore birds and some grebes close by, apparently not in the least disturbed by the train. The vicinity of Tunis we learn is notable for its variety of Larks, no less than twenty varieties occurring there.—W. S.

Grote on the Birds of Ukerewe Island.[2]—This interesting island, lying in the great African lake, Victoria-Nyanza, was visited during 1908–1909 by a German missionary, Peter Conrad, who formed a collection of 750 birds representing 175 species, which Mr. Hermann Grote has listed and discussed in the present paper. The novelties contained in the collection have been previously described.—W. S.

Griscom on 'The Winter Avifauna of the Camargue'.[3]—This is a pleasing account of a four days visit to this remote corner of France with an annotated list of eighty species observed, also a list of 53 species observed on a single day, December 31, almost half of which were water birds.—W. S.

---

[1] First Impressions of Tunisia and Algeria. By David A. Bannerman. The Ibis. July, 1921. pp. 387–414.

[2] Vogel der Ukerewe-Insel des Victoria-Nyanza. von Hermann Grote, Jour. f. Ornith., July, 1921, pp. 406–457.

[3] Some Notes on the Winter Avifauna of the Camargue. By Ludlow Griscom. The Ibis, October, 1921. pp. 575–609.

Bannerman on Birds from the Belgian Congo.[1]—This paper consists of notes on nineteen species of particular interest or rarity, among the 197 contained in the collection made by Dr. Cuthbert Christy in the Uelle River District, N. E. Belgian Congo. Notes on some of the specimens and a description of a new *Crateropus* have already been published by Mr. Bannerman in the Bulletin of the British Ornithologists' Club.—W. S.

Rothschild on Birds from Dutch New Guinea.[2]—The collection here described was made mainly on Mt. Kunupi, Weyland Mts., inland, from Geelvink Bay. It contained among other interesting specimens 153 skins of Paradise-birds representing 22 species and subspecies. A new Honey-eater *Melirrhophetes belfordi joiceyi* (p. 285) is described—W. S.

Recent Papers on Bird Conservation.—The constant demand for literature in carrying on the work of bird conservation necessitates the continual reissue of the leading facts and arguments in new form. An admirable pamphlet covering the whole theory of bird protection is 'The Utility of Birds' by Edward H. Forbush,[3] issued by the Massachusetts Department of Agriculture, while the U. S. Biological Survey's latest publication on these lines is 'Farm Help from the Birds' by W. L. McAtee[4] in which the food of many species of birds is briefly summarized and the method of investigating the food habits is described. Another pamphlet from the same source by E. A. Goldman[5] is entitled 'Conserving our Wild Animals and Birds' and explains both the object and the difficulties in keeping up the game supply and preventing extermination of species. The existence today of over five million licensed hunters who go out for game every year is a serious factor.

Dr. John C. Phillips[6] discusses much the same questions in his 'Conservation of our Mammals and Birds' and he is forced to admit that "the outlook today to the lover of wild life and wild places, is most discouraging" though he does not share the views of some who care deeply for these

---

[1] On some Rare Birds from the Belgian Congo collected by Dr. Cuthbert Christy. By David A. Bannerman. Rev. Zool. Afric. (Bruxelles). VII, Fasc. 3, 1920. pp. 284–295.

[2] On Some Birds from the Weyland Mountains, Dutch New Guinea, By Lord Rothschild. Novitates Zool. XXVIII, pp. 280–294, September 1921.

[3] The Utility of Birds. Dept. Bull. No. 9. Dept. of Agric. Commonwealth of Mass. Div. of Ornithology. Edward Howe Forbush, Director. July 1921, pp. 1–83. Numerous illustrations.

[4] Farm Help from the Birds. By W. L. McAtee. Separate No. 843. Year Book U. S. Dept. Agriculture, 1920. pp. 253–270. Illustrated.

[5] Conserving our Wild Animals and Birds. By Edward A. Goldman. Separate No. 836, Year Book U. S. Dept. Agriculture, 1920. pp. 159–174. Illustrated.

[6] Conservation of Our Mammals and Birds. By John C. Phillips. Harvard Graduates' Magazine. September, 1921, pp. 36–51.

things, that the situation is utterly hopeless. He reviews the cases of the American game animals and of certain birds actually extinct or nearing extinction.

In the way of reports we have Mr. Forbush's annual report[1] of what is now known as the Division of Ornithology of the Massachusetts Department of Agriculture. In this the question of the economic status of the Downy Woodpecker and the Yellow-bellied Sapsucker is considered at length and decided favorably for the birds so far as Massachusetts is concerned. There is also a summary of bird activity in the state by months.

The annual report of the chief of the Biological Survey[2] once more emphasizes the varied and important work carried on by this Bureau and it is regrettable to know that reports on the birds of Alabama, New Mexico, and Texas have been completed but have not yet been published, we presume from lack of funds. It is most unfortunate that after carrying on valuable research work of this kind no general benefit can be derived from it. The National Association of Audubon Societies presents in 'Bird Lore,' its usual interesting and well illustrated report, which diserves the careful study of all interested in bird protection. Mr. Ahrens, who recently made a tour of the National Parks of America, has published in Berlin a report on the Conservation of Nature in the United States.[3]

The West Chester, Pa. Bird Club has issued another of its attractive reports and the usual synopsis of the 'Game Laws for 1921' and the 'Directory of Officials and Organizations connected with the protection of Birds and Game 1921' have both been issued by the Biological Survey at Washington.

The Ornithological Magazines.

Bird-Lore.[4] XXIII, No. 5. September–October, 1921.

Why Birds Interest Me. By Eugene Swope.—A beautiful analysis of the real meaning of wild bird life to the author. "It symbolizes" he says "a life of more spirit and less clay, which I seem to have lost for the most part somewhere along the way." The theme is ably continued by Dr. Chapman on the editorial page.

Three Weeks in the Boat Blind. By Guy A. Bailey.—With some excellent photographs of shore-birds, Black Terns, etc. "Sandpipers,"

---

[1] First Annual Report of the Division of Ornithology. By Edward Howe Forbush. Annual Report Mass. Dept. ofA gri. for year ending Nov. 30, 1920. 1921, pp. 1–47.

[2] Report of Chief of Bureau of Biological Survey (for year ending June 30, 1921).

[3] Ahrens. Mittellungen über den Naturschutz in den Vereinigten Staaten vornehmlich seit 1915. (Beitr. zur Naturdeinkmalpflege, Band IX. Heft 1 Berlin, 1921, pp. 96–109).

[4] D. Appleton & Co., Harrisburg Pa. Edited by Frank M. Chapman. $1.50 per year.

says the author, "are very active and there is no better way to become impressed with the idea than to try taking their pictures."

With the Birds in Alaska. By Mrs. G. W. Gasser.

The educational leaflet treats of the Canada Goose.

Bird-Lore. XXIII, No. 6. November–December, 1921.

A Double Tragedy. By Dr. and Mrs. F. N. Wilson.—With photographs of Quail.

What Birds Signal with their Tails. By Ernest T. Seton.

Cultivating the Birds. By C. S. Thoms.—Photographs of birds at baths and feeding shelf.

Billy a Great Horned Owl. By Dell Coleman.

Migration and Plumage Notes cover the Rusty Blackbird and Brewer's Blackbird. There seems to be a lack of uniformity in 'Bird-Lore' in the use or omission of the possessive form in such names as Brewer's Blackbird, and we had decided that authors were allowed to follow their own inclination in the matter, but when we find the editor himself using both forms on the same line (p. 299) we are forced to decide that he is endeavoring to harmonize the eastern and western schools!

The admirable annual report of the National Association of Audubon Societies occupies more than half of this bulky number.

The Condor.[1] XXIII, No. 5. September–October, 1921.

Nests of Mourning Doves with Three Young. By Margaret M. Nice.

Notes on the Rocky Mountain Jay in the Yellowstone National Park By M. P. Skinner.

A Twelve-Month with the Shorebirds. By Allen Brooks.—On the British Columbian coast, in Alberta and in Florida.

Notes from Southeastern Alaska. By George Willett.

The Northward Range of the Allen Hummingbird. By Tracy I. Storer.—Considers it of only casual occurrence north of California. There is as a matter of fact only one record beyond the limits of that state, supported by a specimen.

The Condor. XXIII, No. 6. November–December, 1921.

Home Life of the Black-tailed Gnatcatcher. By Robert S. Woods.

Notes on Fall Migrations of Fox Sparrows in California. By Joseph Mailliard.

The Mind of the Flock. By R. C. Miller.

Nesting Pine Grosbeaks in Plumas County, California, By Richard Hunt.

The Wilson Bulletin.[2] XXXIII, No. 3. September, 1921.

The Roadside Census. By Margaret M. Nice and L. B. Nice.—Interesting tabulations of numbers of species and individuals seen from an automobile.

---

[1] Cooper Ornithological Club, W. Lee Chambers, Eagle Rock, Los Angeles Calif. Edited by Joseph Grinnell. $2 per year.

[2] Lynds Jones, Editor, Oberlin Ohio, $1.50 per year.

An Annotated List of the Land Birds of Sac County, Iowa. Part II. By J. A. Spurrell.

Notes on the Distribution and Migration of Nebraska Birds. By M. H. Swenk and R. W. Dawson.

The Oölogist.[1] XXXVIII, No. 9. September, 1921.

Birds of North Hero Island, Vermont. By C. M. Brooks.

Some Summer Birds of the Wisconsin Woods. By C. C. Sanborn.

The Oölogist. XXXVIII, No. 10. October, 1921.

Nest and Eggs of *Thryospiza mirabilis.* By H. H. Bailey.

Journal of the Museum of Comparative Oölogy.[2] II, No. 1-2, August 16, 1921.

Five articles by W. L. Dawson in defence of egg collecting and on the operations of the 'Museum' occupy about half of the number, while two others by Mr. Dawson treat of 'Beach Sand as a Drawer Lining', and 'The Season of 1917,' the later an extended account of field operations of Mr. Dawson and his associates near Tucson, Arizona, and in the Patagonia mountains, with notes on the rarer and more interesting species and a nominal list of all of the species observed. Mr. Dawson also contributes a number of short notes including a list of notable bird occurrences at Santa Barbara, covering nineteen species.

There are two other short articles, one by R. S. Sutherland on Penguins and another by J. K. Jensen on 'Nesting Boxes as a Help for a Collector of Birds' Eggs'. Many good sets of eggs of hole-nesting birds, the author explains, are lost by cutting into the tree either before the set is complete or after the eggs have been hatched. By putting up nest boxes the eggs may be under constant observation and be collected at just the right time. Decidedly a novel argument for the erection of nest boxes!

This issue is illustrated by many excellent half-tones. Incidentally we learn that two "trial issues" of Mr. Dawson's 'Birds of California,' each of 32 pages, appeared in March last, but apparently these issues have been discontinued as he states that it is still impossible to make a final announcement as to the method of publication.

The Ibis.[3] (11 Series) III, No. 4. October, 1921.

Bird Notes from Southern Spain. By J. H. Stenhouse.

Some Notes on the Winter Avifauna of the Camargue. By Ludlow Griscom.(see antea, p. 129).

A Note on Lampribis in East Central Africa. By J. P. Chapin.

An Account of the Birds met with during a two months shooting Trip in Northern Rhodesia. By S. R. Clarke.

Notes on Some Birds from the Near East, and from Tropical East Africa. By Col. R. Meinertzhagen. This paper contains critical studies of various species with discussion of their differentiation into subspecies.

---

[1] R. M. Barnes, Editor, Lacon, Ill., 50 cts per year.

[2] W. L. Dawson, Editor, Santa Barbara, Calif. $1.50 per year.

[3] Wheldon and Wesley Ltd, 28 Essex St., Strand London. W. L. Sclater, Editor 52 shillings per year.

In connection with the Crested Larks (*Galerida*) the several races were carefully compared with the humidity and rainfall of their habitats, both as regards the entire year and the nesting season, with the result that no correlation was found to exist. There was however a direct correspondence between the tone of coloration of the bird and that of the soil upon which it lived, and the author concludes that protective coloration is responsible. Futhermore he finds that three races of Crested Larks have lived in the Giza Zoological Gardens, near Cairo, for many years subjected to identical conditions and have molted true, showing no tendency to change the coloration of their plumage, a result that coincides with Prof. Sumner's experiments with Californian White-footed Mice, but is directly opposed to those of Mr. Beebe with doves.

So many of the present day discussions on the nature of subspecies hinge upon this very question that it is imperative that we shall have a number of identical experiments carried on with the greatest care to eliminate possible disturbing factors.

We are not satisfied in systematic zoology to finally admit a subspecies without a large series of specimens and why should we discuss the fundamental nature of a subspecies and reach a conclusion with only two or three experiments from which to take our data?

Notes on the Birds of Alcudia Majorca. By Capt. P. W. Munn.

Subspecies and their Part in Evolution. By J. L. Bonhote.—A continuation of the discussion contained in previous letters to 'The Ibis' from Loomis and Lowe and Praed. Mr. Bonhote very rightly, we think, contends that the term subspecies should be restricted to geographic forms, the origin of which by the way he definitely attributes to "the climatic conditions of their habitat," which is directly opposed to Col. Meinertzhagen's conclusions presented in this same issue of 'The Ibis' and commented upon above.

He also considers that each species contains a combination of factors not present in other species while the subspecies of the same species all contain exactly the same factors, though their somatic expression has been originally altered by the environment and has become inherited.

On this basis there are certainly a number of so-called species which will have to be regarded as subspecies since they are clearly geographic forms differing from subspecies only in the fact that no intergrades now exist. We might ask how are we to ascertain just what are the factors that make up a species and how are we on this basis to relegate a given form to the category to which it belongs.

We must admit that we still fail to find any indication in the evidence to be obtained from forms in nature, of any difference except in degree between the species and the subspecies. It may be possible that certain widely separated species may have originated in some other way but most species are so obviously exaggerated examples of geographic races between which the intergrades have dropped out that it is impossible to imagine any other origin.

There is in Mr. Bonhote's valuable paper one statement that seems somewhat contradictory, though we may not have understood him correctly. On page 721 referring to statements of Lowe and Praed he says: "they imply that variations (subspecies) caused by environment cannot be inherited; and hence it would follow that a true subspecies could have had no influence on evolution and could never develop into a new species," and then proceeds to criticise their statement; and yet he himself says (on page 725) "a geographic form could never become a separate species." Perhaps his criticism referred only to the first half of their statement.

Another contribution to this subject is by Miss Maud D. Haviland in which she criticises the use of certain terms by other writers in a different sense from that usually understood, and in this connection we might be pardoned for calling attention to her use of the word "geno-type" which in ornithological literature is almost universally used to denote the type of a genus.

Among the reviews we find Mr. Mathews credited with recording a very important discovery" in the last part of his 'Birds of Australia,' i. e., that the types of Gould's species are not all in Philadelphia. We did not know that anyone had ever made such a claim, but the location of each type was thoroughly worked out some years ago by Stone and Mathews (Austral Avian Record I No. 6–7.)

Bulletin of the British Ornithologists' Club. CCLXII.[1] October 29, 1921.

Mrs. A. C. Meinertzhagen presents a description of a new Golden Plover from the Orkneys, *Pluvialis apricarius oreophilus* (p. 6) and Col Meinertzhagen a Rock Pigeon, *Columba livia butleri* (p. 6) from Gebeit, Sudan; M. J. Nichol describes *Galerida cristata halfae* (p. 7) from Wadi Halfa and *Charadrius varius allenbyi* (p. 7) from Egypt. T. Iredale separates the Palaearctic Red Phalarope as *Phalaropus fulicarius jourdaini* (p. 8) type from Spitzbergen. D. A. Bannerman describes *Anthreptes ogilvie-granti* (p. 9) from River Ja, Cameroon.

Stuart Baker describes *Dacaeum minullum subflavum* (p. 12) from Belgaum; H. C. Robinson *Cyornis rubeculoides klossi* (p. 12) south Annam, and J. D. LaTouche eleven new birds from China.

British Birds.[1] XV, No. 5. October 1, 1921.

Notes on the Great Auk. By W. H. Mullens.—Additional to those in Gurney's 'Early Annals of Ornithology' with reproductions of some early figures of the bird.

A Note on the Red-backed Shrike. By J. H. Owen.—Does not have a collected larder but hangs its prey on any convenient thorn.

British Birds. XV, No. 6. November 1, 1921.

Observations on the Breeding Habits of the Merlin. By W. Rowan.

---

[1] H. F. & G. Witherby, 326 High Holborn, W. C., London. P. R. Lowe, Editor.

[2] H. F. & G. Witherby, 326 High Holborn, London, W. C., H. F. Witherby Editor. 20 shillings per year.

A Short Description of the Sequence of Plumages in some Palaearctic Surface-feeding Ducks. By E. Lehn Schioler.

Avicultural Magazine.[1] XII, No. 9. September, 1921.

Nesting Notes on the Yellow-billed Cardinal (*Paroaria capitata*). By Capt. Gerald Rattigan.

The Yellow-backed Whydah. By E. Hopkinson.—Observations in Gambia.

Avicultural Magazine. XII. No. 10. October, 1921.

Zebra Finches at Liberty. By the Marquess of Tavistock.—They do well even in a small garden, never wandering far from home.

Bateleur Eagles. By F. D. Welch.—Variation in their coloration discussed.

Voices of Some Owls and Remarks on Coloration. By F. D. Welch.

Avicultural Magazine. XII, No. 11. November, 1921.

Shrikes as Cage-Birds. By Dr. E. Hopkinson.

The Emu.[2] XXI, Part 2. October, 1921.

The Naretha Parrot (*Psephotus narethae*) sp. nov. By H. L. White. Discovered by F. L. Whittock at Naretha, West Australia. With a colored plate.

A Central Australian Expedition. By Capt. S. A. White.

Further Notes on the Lyre-Bird. (*Menura superba*). By Tom Tregellas.—Photographs of its haunts, nest, dancing mound etc.

Notes on the Australian Tubinares. By E. W. Ferguson.—Petrels and Albatrosses.

The 'Times' on John Gould.—A reprint of a review of his work in this famous London newspaper. With a portrait.

Notes on Birds Observed at Ebor and the Nullarbor Plain. By A. S. Le Souef.

Further Notes from Peel Island, Moreton Bay, Queensland. By N. V. I. Agnew.

Birds of Barunah Plains and District. By James Russell.

Under 'Camera Craft' appears a photograph of a pair of nesting Emus with their young.

Revue Francaise d'Ornithologie.[3] No. 150. October, 1921. [In French.]

Three Articles on the transporting of their young by birds of prey.

Birds of the Mamara Forest and the Environs of Rabat. By F. R. C. Jourdain.

Revue Francaise d'Ornithologie. No. 151. November, 1921. [In French.]

Meeting of the French Ornithological Society.

---

[1] S. Austin & Sons, 5 Fore St., Hartford, England. 25 shillings per year.

[2] H. F. & G. Witherby,326 High Holborn, London, W. C. J. A. Leach, Editor. 21 shillings per year.

[3] A. Menegaux, Editor, 55 Rue de Buffon, Paris. 5 francs per year.

El Hornero.[1] II, No.3. August, 1921. [In Spanish.]

Petrels and Albatrosses of the South Atlantic. By Roberto Dabbene.—An extended discussion of the Tubinares of the region and their distribution.

Remarks on the Neotropical Species of the Genus Anthus. By C. E. Hellmayr.—Recognizes *A. furcatus* with two subspecies; *A. lutescens* with three; *A. correndera* with five; *A. nattereri* with one, *A. hellmayri* with three and *A. bogotensis* with two. Of these *A. correndera catamarcae* (p. 186) Catamarca; *A. hellmayri brasiliensis* (p. 190) Plains of Itatiaya, Brazil and *A. h. dabbenei* (p. 191), Rio Traful, Argentina, are described as new.

List of the Birds of the Falkland Islands. By R. H. Wace.

Some Notes on the Birds of Paraguay. By C. Fiebrig.

A Study of Birds in Relation to Agriculture. By F. Lahille.

L'Oiseau.[2] II, No. 9. September, 1921. [In French.]

Breeding of Lorius lory. By Mrs. M. Burgess.—Received the prize of the Societe Nationale d'Acclimatation for rearing this parrot in captivity for the first time.

The Egrets of Venezuela. By E. Tejera.

L'Oiseau. II, No. 10. October, 1921. [In French.]

Breeding of *Sturnia sinensis*. By A. Decoux.

Le Gerfaut.[3] II, No. 2. 1921. [In French.]

Death of Alphonse Dubois.

Ornithological Observations (in Belgium) May 1, 1920–April 30, 1921. Compiled by G. van Havre.

The value of Birds.

Tori.[4] III, No. II. April, 1921. [In Japanese.]

Obituary and portrait of the late Dr. Isao Ijima.

Breeding of the Green Peafowl, *Pavo muticus*.—With photographs of the young.

The Molting of Some Charadrine Birds. By N. Kuroda.

Notes on Two Stragglers, *Panurus biarmicus russicus* and *Turdus atrigularis*. By S. Uchida.

Notes on the Habits of Richardson's Skua. By T. Moruyama.

Birds Seen in Hiroshima City. By H. Nakao.

A List of Ornithological Papers which have appeared in the Zoological Magazine. By N. Kuroda.

---

[1] R. Dabbene, Editor, Mus. Nac. de Hist. Nat., Buenos Aires, Argentina. $6 per year.

[2] Societe d'Acclimatation, 198 Boulevard St. Germain, Paris. 25 francs per year.

[3] M. de Contreras, Editor, 52 Place Georges Brugmann, Bruxelles, Belgium. 10 francs per year.

[4] Science College, Tokyo Imperial University, Tokyo Japan.

Yearbook of the Netherlands Ornithological Society.[1] II, No. 1. 1921. [In Dutch].

A Study of the Avifauna of Gajo-land (Sumatra). By F. C. van Heurn and Baron Snouckaert van Schauburg.

The Birds of Homer. By J. S.

On our Knowledge of a Sumatran Woodpecker. Chrysocolaptes lucidus chersonensis. By E. Stresemann.

The Black-necked Grebe. By van Dedem.

On Quaternery Nomenclature, and its Use in Ornithology. By A. Laubmann.—This is an attempt to place an additional burden upon our already overtaxed system of nomenclature. As we have already pointed out elsewhere many of our nomenclatural troubles have been due to the fact that we try to do too many things with our names. The quadrinomial undoubtedly indicates more accurately the genetic relationships of the bird indicated but it becomes useless as a name because it is too cumbersome.

Yearbook of the Netherlands Ornithological Club. II, No. 2. [In Dutch.]

Proceedings of the Club Meeting of March 30, 1921.

Trip to Belgium. By Baron Snoukaert van Schauburg.—Account of the museums, etc.

A Visit to Savoy. By G. J. Van Oordt.

On the Occurrence of *Serinus canarius germanicus* in the Netherlands. By P. A. Heus.

Yearbook of the Netherlands Ornithological Club, "Festnummer" published on the tenth anniversary September, 1921. [In Dutch.]

The 1920–1921 Expedition to New Guinea.

On the Birds of the Mamberamo Country North and Central Dutch New Guinea.

Danske-Fugle.[2] II, No. 1. 1921. [In Danish.]

1920 Migration and Bird-banding for Denmark.

Ornithologische Beobachter.[3] XVIII, No. 9. June, 1921. [In German.]

Review of the Work of the Swiss Station for Bird-banding in Bern for 1920. By A. Hess.

Ornithologische Beobachter. XVIX, No. 11, August, 1921. [In German.]

Avifauna of Forest Canton Lakes and Gothard. By J. Gengler.

Ornithologische Beobachter. XVIX. No. 1. October, 1921. [In German.]

Ornithology of Lappland. By A. Hess.

---

[1] Club van Ned. Vogelk., Doorn, Holland.

[2] P. Skovgaard, Mogensgade, 32, Viborg, Denmark.

[3] R. G. Zbinden & Co., Basel, Switzerland. 10 francs per year.

Proceedings of the Bavarian Ornithological Society. XV, No. 1. April, 1921. [In German.[

Netta rufina as a breeding bird in the Bodensee. By R. Lauterbon.

On the Influence of Meteorological Factors on Bird Song. By A. Schwan.

On the Song of the Yellowhammer. By B. Hoffman.

Ornithologische Monatsberichte. Vol. 29, No. 9–10. September–October, 1921. [In German.]

H. Grote describes *Eremomela pusilla tessmanni* (p. 84), and *Pentholaea albifrons reichenowi* (p. 93).

Ornithologische Monatsberichte. Vol. 29, No. 11–12. November–December, 1921. [In German.]

H. Grote describes *Erythropygia quadrivirgata rovumae* (p. 109) from Mbarangandu River, Africa.

Ornithological Articles in Other Journals.

Fisher, G. Clyde. Reminiscences of John Burroughs. (Natural History, XXI, No. 2, March–April, 1921.)

Overton, Frank. Photographing Great Horned Owls. (Ibid.)—A series of remarkable illustrations some of which represent the bird in flight.

Beck, Rollo H. Visiting the Nests of Seabirds by Automobile. (Ibid No. 4, July–August, 1921.)—Experiences on Christmas Island.

Baxter, Evelyn V. and Rintoul, L. J. Report on Scottish Ornithology in 1920, including Migration. (The Scottish Naturalist, No. 115–116, July–August, 1921, and No. 117–118, September–October, 1921.)

Gross, Alfred O. The Audubon Societies of Brunswick. (The Maine Naturalist, I. No. 2, October, 1921.)

Miller, Carrie E. Birds of Lewiston-Auburn, Maine. (Ibid.)—A short popular article. Bird Notes which follow contain two Maine records of the Mockingbird.

Lloyd, Hoyes. Bird Notes by the Way in the Maritime Provinces (of Canada). (The Canadian Field-Naturalist, January, 1921.)

Rowan, William. Some Notes on the Belted Kingfisher. (Ibid. February, 1921.)—A careful study of a nest and young.

Taverner, P. A. The Evening Grosbeak in Canada. (Ibid, March, 1921.)—An historic resume with a detailed account of specimens of a breeding female and fledgling, taken by Wm. Rowan in Manitoba. The former curiously enough seems referable to the British Columbian form rather than to the eastern bird.

Soper, J. Dewey. Gleanings from the Canadian West. Part 1. Avian Fauna of Islay, Alberta. (Ibid.)—An annotated list of fifty-one species.

---

[1] Dultz & Co., Landwehrstr 6, Munich, Germany. 25 Mk. per year.

Terrell, L. McI. Observations on the White-winged Crossbill. (Ibid.)

Taverner, P. A. Swarth on the Fox Sparrow. (Ibid. April, 1921.) —In this careful review the writer, whose opposition to the general use of trinomial designations is well known, makes a good point for his view when he calls attention to the fact that Mr. Swarth, like any other careful monogapher, must needs look up every record for himself and will not take the determination of *anyone* else. "Of what use" says he, "have been the numerous trinomials applied to Fox Sparrows in the many local and other published lists? As far as Mr. Swarth was concerned they were no more than specific binomials."

Mr. Taverner also points out the fact, that the three "groups" into which Fox Sparrows are divisible are really of greater importance than the sixteen subspecies but are not indicated at all in the nomenclature. He suggests that inasmuch as intergradation between them seems not to have been proven they be treated as species. Some of the German ornithologists are advocating the use of quadrinomials to cover just such cases. And yet we are informed that species and subspecies are different in character.

Williams, M. Y. Notes on the Fauna of Lower Pagwachuan, Lower Kenogami and Lower Albany Rivers of Ontario. (Ibid. May, 1921.) —A list of the birds observed during the summer of 1920.

Lloyd, Hoyes. An Aquatic Habit of the Pigeons. (Ibid.)—Records several instances of Pigeons alighting on the water to drink and calls attention to the aquatic habits of most of the birds now considered most closely related to the Pigeons, as significant in this connection.

Crandall, Lee S. The Blue Bird of Paradise (*Paradisornis rudolfi*). (N. Y. Zoological Society Bulletin, September, 1921). Account of the species and reproduction of water-color drawings of the male in display in the New York Zoological Park.

Miller, W. DeW. and Griscom, L. Description of Proposed New Birds from Central America, with Notes on Other Little-known Forms. (American Museum Novitates, No. 25, December 9, 1921.)—*Ortalis cinereiceps saturatus* (p. 1) Matagalpa, Nicaragua; *Creciscus ruberrimus* (p. 2) Jinotega, Nicaragua; *Gallinula chloropus centrals* (p. 3) Metapa, Nicaragua; *Asturina plagiata micrus* (p. 4) Chinandega, Nicaragua; *Ictinia plumbea vagans* (p. 5) PenaPlan, Nicaragua; *Aramides plumbeicollis pacificus* (p. 11) Tipitapa, Nicaragua.

The authors seem to prove that *Crax panamensis* Grant is a synonym of *C. globicera* and that *Gampsonyx swainsoni leonae* Chubb is not separable from *G. s. meridensis* Swann. They also consider the Wood Rails allied to *Aramides cajanea* and come to somewhat different conclusions from those reached by Mr. Bangs.

Oberholser, H. C. Mutanda Ornithologica XI. (Proc. Biol. Soc. Wash. XXXIV, pp. 105–108, June 30, 1921.). Dr. Oberholser finds an earlier designation of type for the genus *Turdus* which transfers it to the

group now known as *Planesticus* (*Merula*). This is unfortunate enough in itself but it necessitates the changing of the specific names of six species of thrushes which were valid under *Planesticus* but in combination with *Turdus* are preoccupied by earlier identical combinations. *Merula albifrons* Ramsay is renamed *Turdus proleucus* (p. 106); *M. tristis* Sw. is renamed *T. assimilis lygrus* (p. 106); *M. grayi lurida* (Bonap.) becomes *T. incompta* Bangs; *M. bicolor* Layard becomes *T. ruficeps* Ramsay; *M. flavirostris* Sw. becomes *T. rofopalliatus* and *M. cinerascens* Rchw, is renamed *T. tephrinus* (p. 107).

Bangs, O. and Penard, T. E. Descriptions of Six New Subspecies of American Birds. (Ibid. pp. 89–92, June 30, 1921).—*Geranospiza caerulescens livens* (p. 89) Sonora, Mexico; *Otus choliba luctisonus* (p. 89) Escazu, Costa Rica; *Mecocerculus leucophrys roraimae* (p. 90) Roraima, British Guiana; *Nuttallornis borealis majorinus* (p. 90) Los Angeles Co., Calif.; *Melanotis caerulescens effuticius* (p. 91) Chihuahua, Mexico; *Tangara viridissima toddi* (p. 92) Santa Marta, Colombia.

Bensley, B. A. An Egg of *Struthiolithus chersonensis* Brandt (Univ. of Toronto Studies No. 19, pp. 3–7, 1921).—Presented to the museum of the University from Honan, China. Six eggs are known, the others being from southern Russia and Manchuria.

Wilson, Etta S. Whistling Swans (*Olor columbianus*) (Proc. Indiana Acad. of Sciences for 1920, pp. 83–85).—Many seen at Detroit, 200 and 300 at once on certain occasions passing overhead. A Trumpeter Swan identified by his call was seen about 1904.

Oberholser, H. C. The Anatine Genus Nyroca and its Nearest Allies (Ibid, pp. 105–106).—Six genera are recognized, *Aristonetta* for the Canvasback; *Perissonetta* (p. 110) a new genus proposed for the Ringneck, *Aithyia; Fulix* for the Scaup; *Nyroca* for the Redhead and *Fuligula*.

Some interesting nomenclatural conclusions are reached. *Aythya* Boie Dr. Oberholser considers is invalidated by *Aethya* Dum. but he accpets *Aithyia* Gloger which he says by virtue of an additional syllable is a different word and tenable under the present rules of nomenclature. We are not quite clear just which code or rule is referred to.

Butler, A. W. Some Rare Indiana Birds. (Ibid, pp. 135–139.)—A number of records.

Evermann, B. W. Notes on the Birds of Carroll, Monroe and Vigo Counties, Indiana. (Ibid, pp. 315–401 published 1921.)

Fisher, M. L. Birds Singing at Night (Ibid, for 1919, pp. 239–240. Publ. in 1921.)—Chat, Yellow-billed Cuckoo and Whip-poor-will. Other species mentioned were apparently the first instance of morning song.

Oberholser, H. C. A Synopsis of the Subspecies of *Electron platyrhynchum* (Leadbeater). (Ibid, pp. 341–344)—*E. p. orienticola* (p. 342) is described as new from Hyutaniha, Brazil.

Forbes, Stephen A. and Gross, A. O. The Orchard Birds of an Illinois Summer. (Bull. Div. Nat. Hist. Survey of Illinois, XIV, pp. 1–8, 1921.)—A survey of the number of birds in a given stretch of open country is made by two observers walking parallel so as to cover a strip 150 feet wide and counting all of the birds which are flushed.

In orchards, of eight species of birds selected as the most numerous, the average was 1120 individuals per square mile, while in non-orchard, the average was 93.

Wetmore, Alexander. Three New Birds of the Family Tinamidae from South America. (Jour. Wash. Acad. Sciences, XI, pp. 434–437, 1921). —*Rhynchotus arcanus* (p. 434) Parana, Argentina; *Nothura maculosa savannarum* (p. 435) Rocha, Uruguay; *Calopezus elegans albidus* (p. 437) San Juan, Argentina.

Hornbeck, J. W. Fall and Winter Birds of Northfield, Minnesota. (The American Midland Naturalist, VII, pp. 69–74, 1921.)

Howe, J. L. Lawrence's Warbler. (Science, LIV, p. 302, 1921.) —Observed sitting on a telegraph wire at Lexington, Va.

Jourdain, F. R. C. The Oxford Expedition to Spitzbergen, 1921. Ornithological Observations. (Nature, CVIII, pp. 151–153.)—Notes on a number of species.

Burkitt, J. P. Relation of Song to Nesting in Birds. (The Irish Naturalist, XXX, No. 10, pp. 113–124. October, 1921.)—Presents much original data and discusses Howard's recent work on territory.

Mayo, L. M. Birds of the Bay. (The Queensland Naturalist, III, pp. 4–5, 1921).—Notes taken during a three months cruise of Moreton Bay.

Buxton, P. A. Notes on Birds from Northern and Western Persia (Jour. Bombay Nat. Hist. Soc., XXVII, pp. 844–882).—A very valuable paper full of systematic discussion and with numerous notes on habits and distribution.

Donald, C. H. Falconry. The Catching of Hawks and Falcons. Being a Supplement to "The Birds of Prey of the Punjab" (Ibid, No. 4, pp. 829–834).—Plates showing the appearance of rapaceous birds in flight.

Jones, A. E. Bird Notes from the Campbellpur-Attock District, Western Punjab. (Ibid, pp. 794–802.)—A briefly annotated list.

Ward, F. Kingdon. Some Observations on the Birds and Mammals of Burma. (Ibid, pp. 754–758.)

Baker, E. C. Stuart The Game Birds of India, Burma and Ceylon. Part XXX (*Arboricola*). (Ibid. pp. 651–664.)

Hellmayr, C. E. On the Birds Collected in South America by Alcide d'Orbigny. (Part 1, Novit. Zool. XXVIII, No. 1, May 1921, pp. 171–213. Part II., Ibid, No. 2, September 20, 1921, pp. 230–276.)—The importance of this paper will be at once recognized by all who have had to deal with neotropical birds. M. d'Orbigny travelled throughout the south-western portions of South America in the interests of the French government in

1826–33 and sent back large collections to the Paris Museum. The birds were described by d'Orbigny and Lafresnay and the types are in the Paris Museum. Lafresnay, however, obtained duplicates for his own collection which was later acquired by the Boston Society of Natural History and other specimens found their way to the Academy of Natural Sciences of Philadelphia and to other museums.

Mr. Hellmayr in the present paper presents a study of the collection at Paris and has identified all of the specimens in terms of our modern nomenclature. If any of the other specimens have reason to be regarded as types the question can now be easily settled.

Some of d'Orbigny's names are naturally found to refer to other forms than those to which they have usually been applied.

Robinson, H. C. and Kloss, C. B. Nine New Oriental Birds. (Jour. Federated Malay States Mus. X, pp. 203–206, 1921, June.)

Kloss, C. B. New and Known Oriental Birds. (Ibid, pp. 207–213.) —Notes and descriptions of forms of *Dicrurus, Chalcoparia,* etc.

Kloss, C. B. Notes on Some Oriental Birds. (Ibid, pp. 214–228.) —Includes a discussion of the races of certain Kingfishers of the genus *Halcyon* and comment on Oberholser's papers on the same groups.

Orozco, Enrique. Utility of Birds in Agriculture. (Mem. y Revista dela Soc. Cient. "Antonio Alzate," XXXVII, pp. 401–407, 1921.) [In Spanish].—A very short resume.

Barros, V. Rafael. Birds of the Valley of Nilahue. (Revista Chilena Hist. Nat., XXIV, Nos. 2, 4, 5, 1920.) [In Spanish.]

Berlioz, M. J. Note on the Migratory Birds in the Valley of the Seine. (Bull. Mus. Nat. Hist., 1921, No. 1.) [In French.]

Berlioz, M. J. Note on a Collection of Birds from Central China. (Ibid, No. 4). [In French.]—Special note on *Merganser squamatus* Gould.

Fischer, W. J. New Records for the Bird Fauna of Wuttemburg. (Jahresb. Ver. Vaterland Naturkunde Wurttbg. 75 Jahr. pp. 143–148). [In German.]

Stadler, H. and Schmitt, C. The Forms of Bird Song. (Archw. fur Naturgeschichte, LXXXVII, 1921, A. heft 5, pp. 276–303.) [In German.]—An analysis of bird song in musical terms and a classification of species under each type.

Laubmann, A. A contribution to the Ornithology of Pfronten in Allgan (Ibid, heft 6, pp. 215–228). [In German.]—List of 97 species with remarks on many of them.

Kellermann, S. On the History of Parrot Importation. (Naturwiss Wochenschrift, XX, pp. 545–550). [In German.]

Hildebrandt, Hugo. A Contribution to the Ornithology of East Hungary. (Mitth. aus dem. Osterlande (Allenburg) XVI, pp. 289–371). [In German.]—Annotated list of 255 species.

Hesse, E. On *Locustella luscinioides.* Its appearances in and present distribution in Germany. (Ibid.) [In German.]

CORRESPONDENCE

Popular names

Editor of 'THE AUK:'

In considering the various problems connected with popular names for birds, particularly as discussed in 'The Auk' for July, 1920, it seems to me that one important feature has been omitted. You state, page 503, "Fortunately we have not and cannot have a code covering the use of popular names." In the Migratory Bird Treaty certain of the Families mentioned are definitely identified in Latin, but the great majority of names, whether of groups or species, are in the common tongue. How can any of these groups or species be identified in law except by reference to such codes of common names as that furnished in the A. O. U. 'Check-List'?

As to Mr. Rowan's suggestion to give several popular names in the 'Check-List' where there are several in use, I fear that if one of them be not made official that all of them will have to be given in future laws requiring the mention of such species. If several in common use were given, one being official, it could always be proved that the official name, which would be the one used in law, included the others given in the 'Check-List'.

It will save the bird protectionist, bird law maker, and bird law administrator, endless trouble if one set of common names be official, and the 'Check-List' has weight in this connection.

The law follows common usage; e. g., Siwash Duck for Scoter, Sea Duck for Eider, and in French similar synonymes are necessary so that all may understand, but the 'Check-List' is nevertheless a stabilizer.

If the common names were not given the stability afforded by the 'Check-List', it would be most difficult to teach the sportsman what bird was meant by the Wood Duck, for example. Common usage in some localities gives this name to birds, I judge, from description, to be the Hooded Merganser, in others to the Golden-eye, because these species too nest in trees. Are the bird protectors to spend time and money in teaching that the Wood Duck is *Aix sponsa* and needs special protection, only to have the bird checkers bow to the "genius of language" which says these are all Wood Ducks, and so name them in the 'Check-List'?

406 Queen Street,
Ottawa, Ontario,
October 21, 1921.

Yours sincerely,
HOYES LLOYD.

We publish Mr. Lloyd's letter inasmuch as it is a criticism on some of our remarks. Many other interesting papers have been submitted for publication bearing upon the question of popular names,—so many in fact that there seems to be no alternative but to return them, as other

matter would be crowded out for some time to come if we attempted to print them. Every contributor seems to have different ideas upon the subject and as there is no definite basis to work from the discussion while interesting fails to reach any result.

As a comment upon Mr Lloyd's remarks on the legal side of the question we might say that in a case in the Philadelphia courts some years ago the judge would accept only Warren's 'Birds of Pennsylvania' as authority for names, and the accidental use of "Cardinal Grosbeak" on a plate in that work was all that prevented his agreement with the lawyer's contention that a "Cardinal" was not a Grosbeak nor a Finch and therefore not protected by law. Legal Ornithology seems to be a science in itself!—Ed.]

Species and Subspecies.

Editor of 'The Auk':

In the July number of 'The Auk' (1921, p. 482), some criticisms are made upon a letter entitled "The Last Phase of the Subspecies" written by Mr. C. Mackworth Praed and myself in the April number of 'The Ibis', (1921, pp. 344–347), in answer to a letter emanating from Mr. Loomis.

In writing this letter Mr Praed and I rather set ourselves to provoke criticism and a discussion of this vexed question. It was not, however, our desire to be misquoted and I, personally, hold the opinion that however desirable criticism may be, it, at least, behooves the critic to read carefully what he sets out to criticise.

Your reviewer states, for instance, "These gentlemen seem to regard the species and subspecies as two different things." As this is precisely and essentially the reverse of what, at any rate, are my own views, I may perhaps be excused for quoting what we did say, especially as it was deliberately said in order to make the matter quite definitely plain.

"On the other hand, to those who accept *in toto* the Darwinian theory or what is commonly accepted as the Darwinian theory, and all that it implies, all subspecies will appear of great value as "incipient species." Now, for our part, it has always been a matter of the greatest difficulty to imagine how a geographical form *which in fact is already a species* can be termed an incipient one" (italics mine).

We then went on, after a slight digression, to repeat the generally accepted view that there would appear to be two main forms of variation, one known as a discontinuous or mutational and heritable form and the other as a fluctuating environmental and non-heritable form; and finally we expressed the opionion that subspecies could be referred to one or the other of these two forms of variation, incidentally leaving the reader to infer that subspecies as nowadays recognised by ornithologists could, in reality, be classified under two categories possessing different values or rank.

Subspecies are, in other words, nothing more than local varieties of species manifested under the guise of, at least, two distinct kinds of variation.

Perhaps I might be allowed to give two concrete examples. In the Bermudas, the Goldfinch (*Carduelis parva*) would appear to have established itself somewhere about the year 1875, cage-birds having apparently been introduced either from the Canaries, Azores or Europe. It would now appear to be of a darker coloration on the upper parts than typical examples and for this reason has been separated by Mr. Kennedy under the name *C. parva bermudianus*.

In point of fact it is "as good a subspecies" as scores of others now recognised; but my point is that this darker coloration is almost certainly due to a purely somatic quantitative or superficial chemical change in the feathers the result of the direct influence of environment and would not be inherited. To put it crudely, it is probably a little richer owing to the increased vigour of the bird in its new congenial surroundings. If the bird were to be re-transported to its original habitat it is safe to say that with the advent of its next crop of contour feathers the coloration would revert to its former tone.

In these respects, this type of subspecies differs fundamentally from, let us say, the Great-crested Grebe of Africa in which we get a qualitative colour-pattern character which differentiates it from the European Great Crested Grebe.

In the latter (*P. c. cristatus*) we have the white eye-stripe continued well backwards beyond the eye while in the former (*P. c. infuscatus*) it abruptly stops as it reaches the eye (cf. illustration Ibis 1915, p. 50).

Could anyone, I venture to ask, familiar with the elementary principles and facts of heredity imagine for a moment that the two cases I have quoted represent comparable examples of variation? Would anyone familiar with the trend of modern research in the direction of the secrets of heredity maintain that the difference in colour pattern between the two forms of grebe just quoted was anything else than a discontinuous variation due to some factor, present or absent, in the gamete, or, on the other hand, would they maintain that it was due to the direct action of environmental circumstances or that it was not a heritable character which owed its origin rather to the mere fact of the isolation of the African and European grebe populations, which isolation permitted, within limits, a free and independent career to any harmless variations which might arise in the fertilised ovum. Assuredly no, I think. Yet both the Bermudan Goldfinch and the African form of Great Crested Grebe are writ down by ornithologists as subspecies with nothing to indicate that as variants from the species they are fundamentally different in character.

In connection with our opinion expressed in regard to the superficial characters of a large proportion of present day subspecies (environmental as opposed to germinal) your reviewer quotes Professor Sumner's ex-

periments with mice in California, where dark coloured forms have bred true ever since they were transferred to a desert environment. What does this prove? surely nothing more than that the dark coloration of these mice was due to a factorial character resident in the chromosomes and was of a fundamentally different character to the superimposed darkness in the case of the Bermudan Goldfinch. I would quote another comparable case, which indirectly serves to illustrate this point.

The normally coloured form of Honey Creeper (*Coereba saccharina* of Lawrence) which used to be common on the islands of St. Vincent and Grenada in the West Indies has within very recent years been practically replaced by its melanistic variation which has received two distinct names, *C. striata* and *C. wellsi*, corresponding to the two islands in which it is found (cf. Austin Clarke 'Auk' XXII p. 392). That this melanistic variation of *C. saccharina* does not owe its origin to any form of direct environmental influence would I think be certainly allowed by authorities far better qualified to speak of it than I am and an additional indication is I think found in the fact that I discovered similar black forms of *C. luteola* on the islands of the Testigos Group where the conditions are very dry and arid *and exactly the reverse* of those met with in St. Vincent and Grenada.

I should be extremely surprised if Prof. Sumner were to introduce these black forms of *Coereba* into his desert Californian regions and find them assuming isabelline tones and moreover I am not in the least surprised that his mice failed to do so although your reviewer evidently expected us to be.

Finally our critic states that Dr. Joseph Grinnell on a previous page of the same number of 'The Auk' sums up the matter concisely when he says "There is no phylogenetic difference between the species and the subspecies." How he could conceivably have said that there was any difference is difficult to imagine, but I should hardly have thought the statement, true as it is, was worth quoting or that it sums up (as your critic states) the very difficult problem with which ornithologists are dealing.

Yours very faithfully

PERCY R. LOWE.

British Museum (Natural History) Cromwell Road, London S. W. 7.
November 19, 1921.

[As we are responsible for all of the unsigned reviews of periodiacl literature in 'The Auk' we hasten to assure Mr. Lowe that we most certainly had no intention of misquoting him. We did, it seems, misunderstand him since he assures us that he does not regard species and subspecies as two different things. Our own contention is that the several subspecies (geographic races) collectively form the species and that when the intergradations between them die out each one thereby becomes a species. Intergradation has always been our criterion in systematic ornithology

for deciding whether a certain form should be given a trinomial or binomial appellation, and the only "difference" between the species and subspecies has been the existence or absence of intergradation.

Mr. Lowe in making a claim for two *kinds* of subspecies which apparently cannot be told apart until extensive breeding experiments have been carried on, is carrying the matter much farther, but it is obvious that until such experiments are carried on and until a new standard is established, intergradation must needs be our only practical criterion for the use of a trinomial name. I should, personally, however, be loath to think that there was any difference in the character of the differentiation that he cites in the case of the Bermudan Goldfinch and in Prof. Sumner's mice except one of degree.—Ed.]

NOTES AND NEWS

Dr. Theobald Johannes Krüper, a Corresponding Fellow of the American Ornithologists' Union since 1884, died in Athens, Greece, Mar. 23, 1921. He was born at Uckermünde in Pomerania, Germany, June 30, 1829, and at the time of his death was within a few months of his 92nd birthday. For nearly half a century, since 1872, he had been Conservator and Director of the University Museum at Athens. In his younger days Dr. Krüper was an energetic traveller and field naturalist visiting many places in northern and southern Europe in quest of natural history material. Nearly every year from 1855 to 1877 he visited some interesting region as shown by the following brief summary of his trips: 1855 Lapland, 1856 Iceland, 1857 Gottland, 1858 Iowian Islands and Acarnama, Greece, 1859, 1865–66, 1873, 1877 Mt. Parnassus, 1860 the Taygetus Mountains in Peloponnesus, 1861 Mt. Velukhi in Eurytania, 1862 the Cyclades, 1863–64 Asia Minor, 1867 Attica, 1868 Germany, 1869 Macedonia, 1870 Mt. Olympus, 1871–72 Smyrna, 1875 the Balkans, 1876 northern Peloponnesus, and 1877 Aegina.

He published a number of short papers on the birds observed during his travels chiefly in 'Naumannia' and the 'Journal für Ornithologic.' His doctorate thesis, in Latin, was on the subject of 'The Geographie Distribution of the Falconidae of Europe', and his first published note in 'Naumannia', in 1852, was entitled 'Die Adler Pommerns.' Among his more important papers were his 'Ornithologische Notizen über Griechenland,' 1862 and 'Beitrag zur Ornithologie Klein Asiens, 1875, both of which appeared in the 'J.f.O.', and 'Zeiten des Gehens und Kommens und des Brutens der Vogel in Griechenland und Iowen', 1875. His memory is recalled by the specific designation of a Nuthatch (*Sitta krueperi*) from Smyrna, named in his honor by Pelzeln in 1863 in recognition of his explorations in Asia Minor. Dr. Krüpers' work in Greece

and Asia Minor was carried on in a region in which comparatively little previous ornithological investigation had been undertaken and which as shown by observations made during the war still offers a fruitful field for ornithological activity.—T. S. P.

FELLOWS OF THE A. O. U. The election of four Fellows at the last annual meeting recalls the fact that on only two previous occasions since the first meeting in 1883 have so many candidates been elected at one time. At the meeting in 1888 four and in 1901 five were elected. The number of Active Members or Fellows has always been limited to 50, but the list was not filled until the annual meeting in November 1889, and then remained so only 16 months when a vacancy occurred by death on March 10, 1891. Since then the list has only been full for 13 months from November 1914 to December 22, 1915, and 12 months from November 1917 to November 1918, in all a little less than three years and a half. On January 1, 1922, there was one vacancy caused by a transfer to the Retired list.

The total number of persons thus far elected as Active Members or Fellows is 91, of whom 34 have been elected since the list was first filled in 1889. Their names are now recorded as follows: Fellows 49, Deceased 22; Retired Fellows 5, Deceased 2, Transferred to list of Corresponding Fellows 5, Resigned 7, Failed to qualify 1. The transfers to the Corresponding list before the Retired list was established in 1910 included T. W. Blakeston, W. E. Bryant, Montague Chamberlain, J. G. Cooper, and D. W. Prentiss, all except Chamberlain now deceased. The eight others whose names are no longer on the list were H. B. Bailey, Walter Faxon, S. A. Forbes, L. S. Foster, J. H. Kidder, F. H. King, F. W. Langdon, and W. E. D. Scott, of whom only Bailey, Forbes and Langdon are still living. Further details regarding transfers and resignations were given in 'The Auk' for Jan, 1918, pp. 110–111. Of the 23 Founders nine are still living of whom seven are in the roll of Fellows. Montague Chamberlain is a Corresponding Fellow and H. B. Bailey resigned in 1891.—T. S. P.

MR. JAMES L. PETERS is about to visit the West Indies to carry on ornithological investigations on behalf of the Museum of Comparative Zoology.

MESSRS. WHARTON HUBER and J. Fletcher Street expect to visit Nicaragua in February in the interests of the Academy of Natural Sciences of Philadelphia. Their time will be largely occupied in the collecting and study of the birds and mammals.

THE ANNUAL MEETING of the Delaware Valley Ornithological Club was held at the Academy of Natural Sciences, Philadelphia, on the evening of January 5, with 40 members in attendance. Mr. James A. G. Rehn was elected president for the ensuing year, the other officers being re-

elected, George H. Stuart, 3rd, Vice-President, Julian K. Potter, Secretary, and Samuel C. Palmer, Treasurer.

The retiring president, J. Fletcher Street, addressed the meeting with comments on his local field trips of the year illustrated by lantern slides.

THE EIGHTH ANNUAL meeting of The Wilson Ornithological Club was held at Chicago on December 26 and 27, 1921. The program sessions were convened in the Field Museum of Natural History and a banquet was held on the evening of the first day at the Ft. Dearborn Hotel. A most interesting program had been arranged and the attendance was above the average. At the business session it was decided to increase the dues of members fifty cents to provide for enlarging the 'Wilson Bulletin' to 64 pages per number. Plans were laid for making the coming year, the 34th year of the Club's existence, the most active in its history and to substantially increase the present membership of six hundred.

ON JANUARY 16, 1922, there was organized at Boston, Mass., The New England Bird Banding Association. Edward H. Forbush was elected President; Chas. W. Townsend, M. D., and James MacKaye, Vice-Presidents; Laurence B. Fletcher, Secretary and Treasurer, and Mrs. Alice B. Harrington, Recording Secretary. The temporary quarters of the association are Room 940, 50 Congress St., Boston.

The district covered embraces all of New England, Quebec and the Maritime Provinces of Canada, and about 300 members have been secured.